					[	<b>ST</b> DEPARTMENT DIVISION O	OF NA					AMEN	FC NDED REPC	RM 3 ORT		
		APP	LICATION I	OR	PERM:	IT TO DRILL	-				1. WELL NAME and		ER 2-30L4BS			
2. TYPE (		RILL NEW WELL ((	REENTE	R P&	A WELL	. DEEPE	N WELL	3. FIELD OR WILDCAT NATURAL BUTTES								
4. TYPE C		Gas	~			nane Well: NO					5. UNIT or COMMUNITIZATION AGREEMENT NAME NATURAL BUTTES					
6. NAME	OF OPERATOR	<b>t</b>									7. OPERATOR PHO	NE				
8. ADDRE	KERR-MCGEE OIL & GAS ONSHORE, L.P.  B. ADDRESS OF OPERATOR P.O. Box 173779, Denver, CO, 80217										9. OPERATOR E-MA	IL	29-6515			
	RAL LEASE N	JMBER	7.0. Box 1/3/	/9, De		CO, 80217 INERAL OWNE	RSHIP	•			12. SURFACE OWN		@anadarko	.com		
	L, INDIAN, OF	UTU463	12 - 161		FEDE	RAL D IND	IAN 🛑	) STATE (	) F	EE 💮		DIAN (	•		FEE ()	
		OWNER (if box :									14. SURFACE OWN		•			
15. ADDR	LESS OF SURF	ACE OWNER (if b	ox 12 = 'tee'	)							16. SURFACE OWN	EK E-MA	AIL (II DO)	( 12 = Te	ee <sup>-</sup> )	
	AN ALLOTTEE 2 = 'INDIAN')	OR TRIBE NAME				ITEND TO COM IPLE FORMATI  (Submit C	ONS	L <b>E PRODUCT</b> gling Applicati		IO (	VERTICAL DIF	RECTION	IAL 📵	HORIZON	ITAL 🛑	
20. LOC	ATION OF WE	LL		FO	OTAGE	s	QT	r-QTR	SE	CTION	TOWNSHIP	R	ANGE	МЕ	RIDIAN	
LOCATIO	ON AT SURFAC	CE	20	96 FS	SL 800	) FWL	N	IWSW		30	9.0 S	2	2.0 E		S	
Top of U	ppermost Pro	ducing Zone	17	'05 FS	SL 758	3 FWL	N	iwsw		30	9.0 S	2	2.0 E		S	
At Total	Depth		17	'05 FS	SL 758	3 FWL	N	IWSW		30	9.0 S	2	2.0 E		S	
21. COUN	ITY	UINTAH			22. DISTANCE TO NEAREST LEASE LINE (Feet) 758			:)	23. NUMBER OF ACRES IN DRILLING UNIT 551							
						STANCE TO Nied For Drilling	g or Co		AME PO	OOL	26. PROPOSED DEF	PTH : 9558	TVD: 95	28		
27. ELEV	ATION - GROU	JND LEVEL 4971			28. BC	OND NUMBER	WVDO	000291			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 43-8496					
		4971			He	ole, Casing,			ormati	ion		75	0430			
String	Hole Size	Casing Size	Length	We	ight	Grade & Th	read	Max Mu	d Wt.		Cement	Sacks	Yield	Weight		
SURF	11	8.625	0 - 2520	28	8.0	J-55 LT8	&C	0.2		Type V		180	1.15	15.8		
										Class G		270	1.15	15.8		
PROD	7.875	4.5	0 - 9558	1:	1.6	I-80 LT8	3.C	12.5 Pren		Premium Lite High Strength		310	3.38	11.0		
										50/50 Poz 1280 1.31 1						
						A	ГТАСН	IMENTS								
	VERIFY T	HE FOLLOWIN	G ARE ATT	ACHI	ED IN	ACCORDAN	CE WI	TH THE UT	AH O	IL AND G	GAS CONSERVATI	ON GE	NERAL F	RULES		
<b>⊮</b> w	ELL PLAT OR	MAP PREPARED E	BY LICENSED	SUR	VEYOR	OR ENGINEE	R	<b>№</b> сом	PLETE	DRILLING	PLAN					
AF	FIDAVIT OF S	TATUS OF SURFA	CE OWNER A	GREI	EMENT (IF FEE SURFACE) FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER											
DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY TOPO									GRAPH	IICAL MAI	•					
NAME La	aura Abrams			TIT	<b>LE</b> Reg	julatory Analyst	II			PHONE 7	20 929-6356					
SIGNAT	URE			DA	<b>TE</b> 06/2	21/2011				EMAIL L	aura.Abrams@anadark	co.com				
	iber assign )4751710(			АРІ	PROVA	ıL				Perm	De Grand Control of the Control of t					

NBU 922-30L PAD

Drilling Program

1 of 7

# Kerr-McGee Oil & Gas Onshore. L.P.

# NBU 922-30L4BS

Surface: 2096 FSL / 800 FWL NWSW BHL: 1705 FSL / 758 FWL NWSW

Section 30 T9S R22E

Uintah County, Utah Mineral Lease: UTU 0463

# **ONSHORE ORDER NO. 1**

#### **DRILLING PROGRAM**

# Estimated Tops of Important Geologic Markers: Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1393	
Birds Nest	1700	Water
Mahogany	2065	Water
Wasatch	4650	Gas
Mesaverde	7282	Gas
MVU2	8265	Gas
MVL1	8816	Gas
TVD	9528	
TD	9558	

# 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program

# 4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

# 5. <u>Drilling Fluids Program:</u>

Please refer to the attached Drilling Program

# 6. <u>Evaluation Program</u>:

Please refer to the attached Drilling Program

NBU 922-30L PAD Drilling Program 2 of 7

## 7. <u>Abnormal Conditions</u>:

Maximum anticipated bottom hole pressure calculated at 9528' TVD, approximately equals 6,288 psi 0.64 psi/ft = actual bottomhole gradient

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 3,988 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

#### 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

## 9. <u>Variances:</u>

Please refer to the attached Drilling Program. Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- · Blowout Prevention Equipment (BOPE) requirements;
- · Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

# Background

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

NBU 922-30L PAD Drilling Program
3 of 7

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 11 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

#### Variance for Special Drilling Operation (surface equipment placement) Requirements

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and

NBU 922-30L PAD Drilling Program
4 of 7

on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

## Conclusion

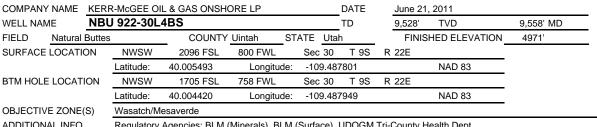
The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

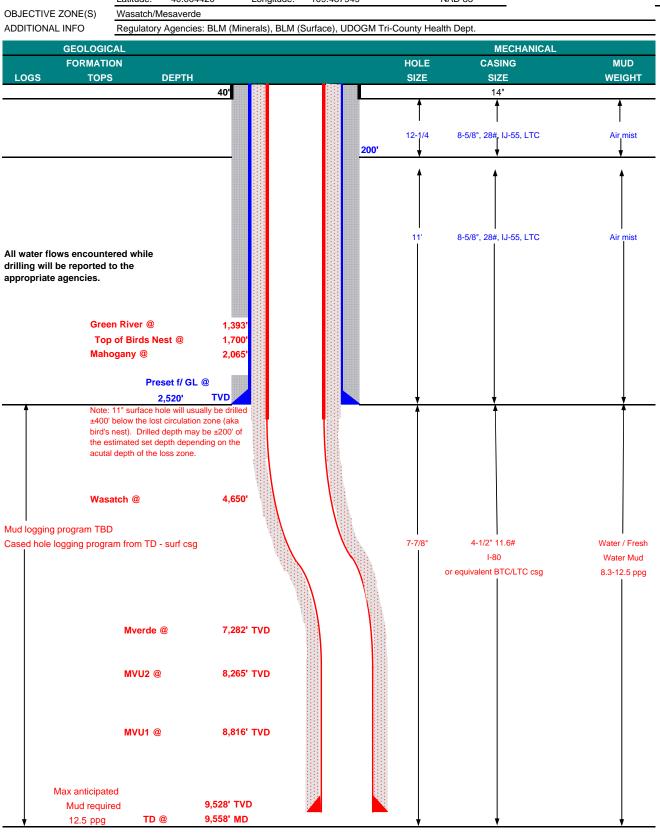
# 10. Other Information:

Please refer to the attached Drilling Program.



# KERR-McGEE OIL & GAS ONSHORE LP <u>DRILLING PROGRAM</u>







# **KERR-McGEE OIL & GAS ONSHORE LP**

## **DRILLING PROGRAM**

CASING PROGRAM	<u>1</u>								DESIGN I	ACTORS	
										LTC	BTC
	SIZE	INT	ERVAL		WT.	GR.	CPLG.	BURST	COLLA	PSE	TENSION
CONDUCTOR	14"	(	0-40'								
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,520	28.00	IJ-55	LTC	2.15	1.59	5.63	N/A
								7,780	6,350	279,000	367,000
PRODUCTION	4-1/2"	0	to	9,558	11.60	I-80	LTC/BTC	1.11	1.03	3.11	4.09

**Surface Casing:** 

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.64 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	•	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1		+ 0.25 pps flocele					
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
		+ 2% CaCl + 0.25 pps flocele					
SURFACE		NOTE: If well will circulate water to	o surface,	option 2 wil	l be utilized		
Option 2 LEAD	2,020'	65/35 Poz + 6% Gel + 10 pps gilsonite	190	35%	11.00		3.82
		+ 0.25 pps Flocele + 3% salt BWOW					
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
		+ 0.25 pps flocele					
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION LEAD	4,148'	Premium Lite II +0.25 pps	310	20%	11.00		3.38
		celloflake + 5 pps gilsonite + 10% gel					
		+ 0.5% extender					
TAIL	5,410'	50/50 Poz/G + 10% salt + 2% gel	1,280	35%	14.30		1.31
		+ 0.1% R-3					

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

## ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

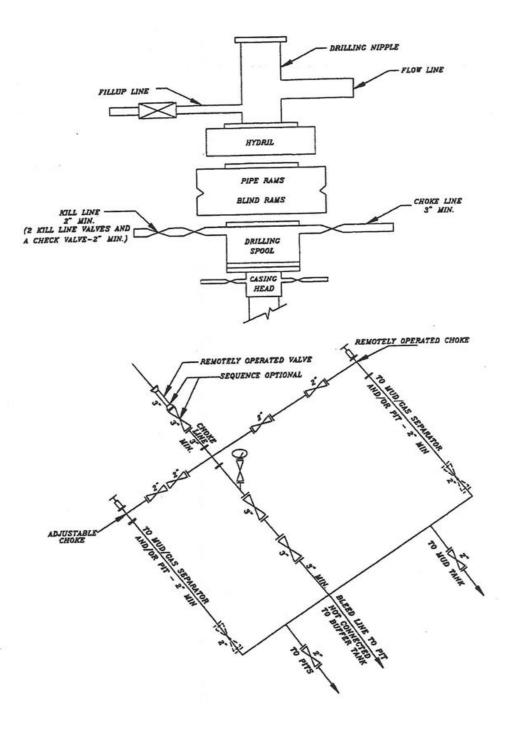
BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.
Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

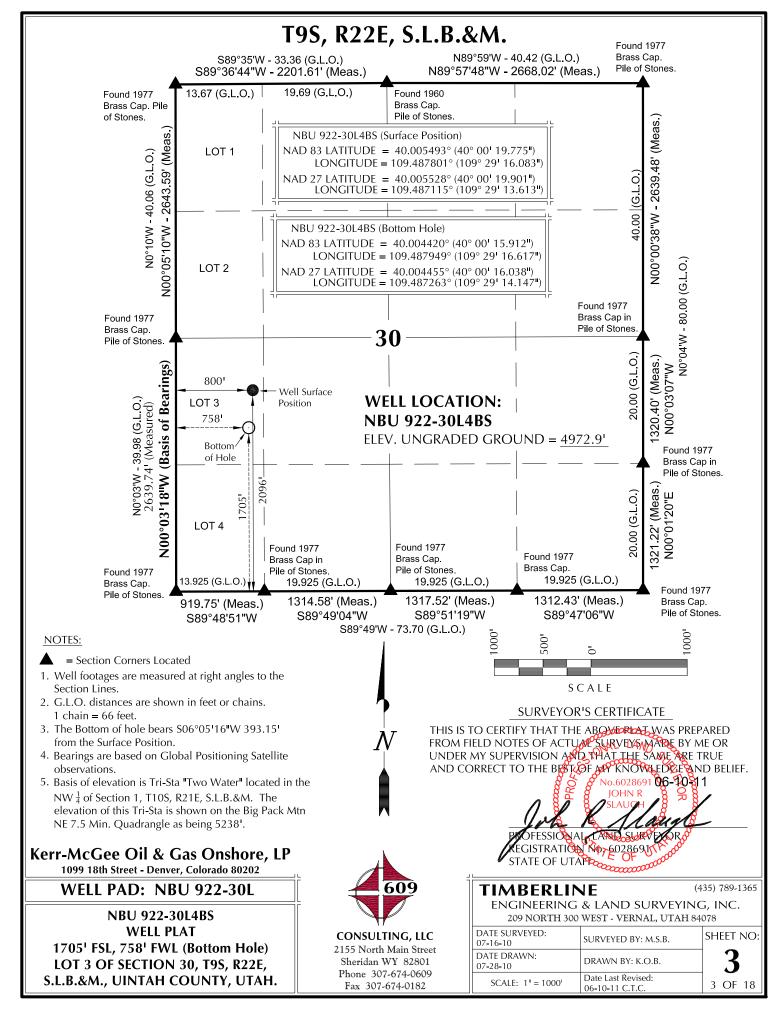
DRILLING ENGINEER:		DATE:	
	Nick Spence / Danny Showers		
DRILLING SUPERINTENDENT:		DATE:	
	Kenny Gathings / Lovel Young		

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

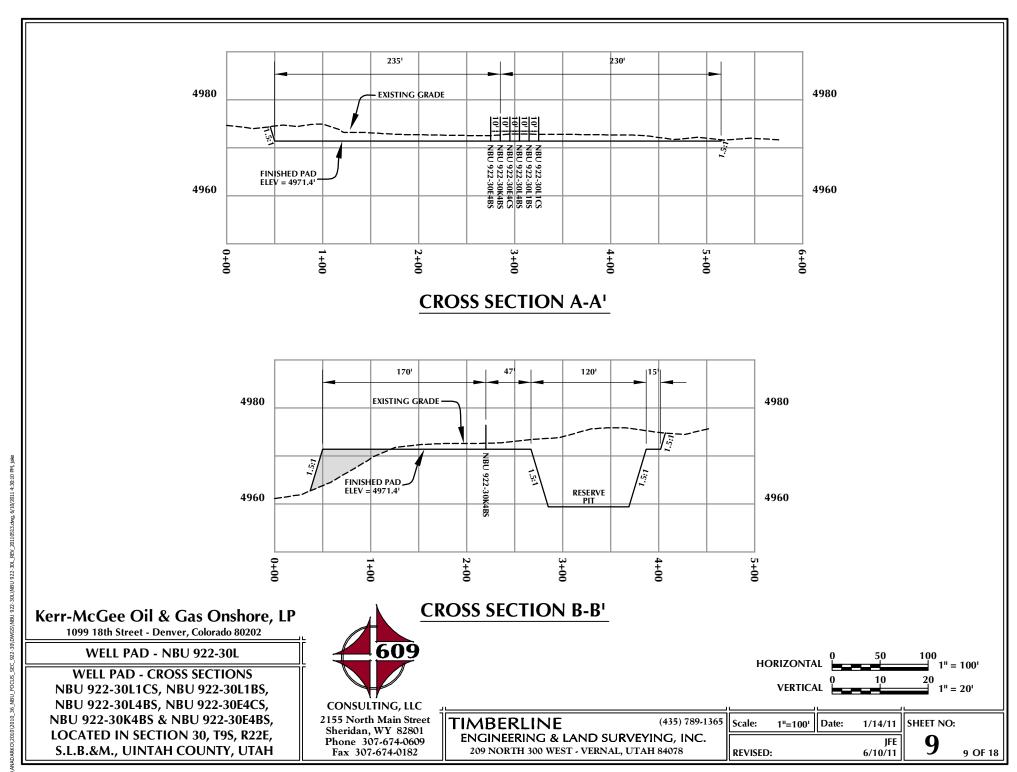
EXHIBIT A NBU 922-30L4BS

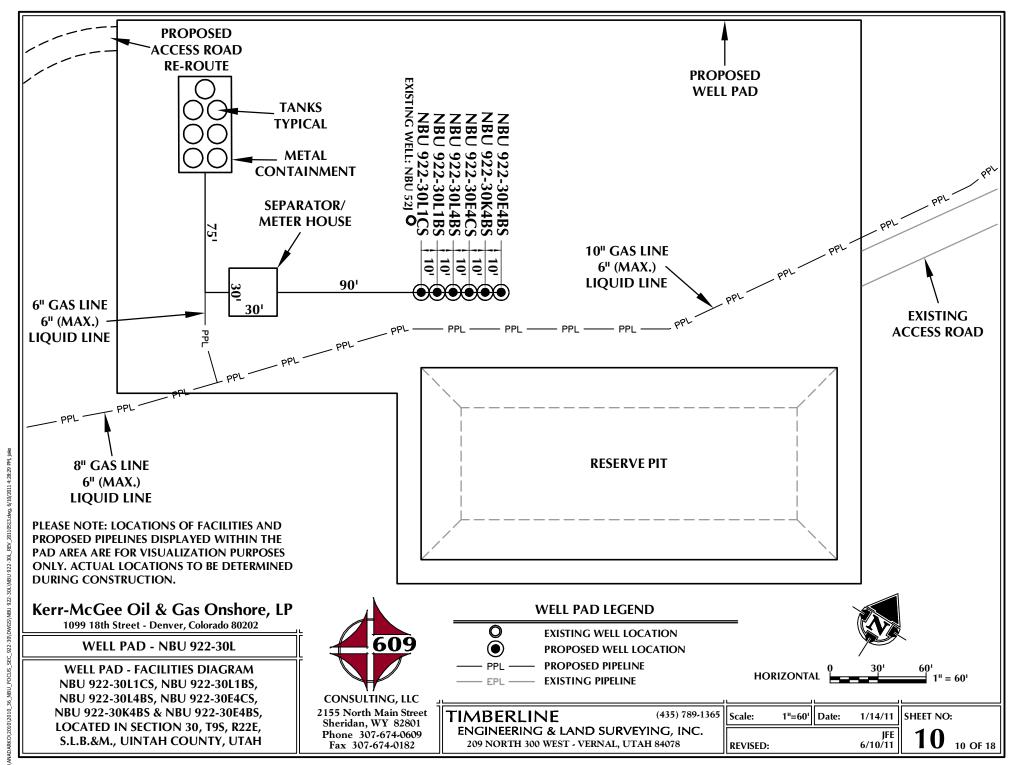


SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK



			SURFACE POS				BOTTOM HOLE NAD83 NAD27						
WELL NAME	LATITUDE	LONGIT	UDE LATITU	NAD27	GITUDE	FOOTAGES	LATIT	NAD	83 LONGITUDE	NAD Latitude	LONGITUDE	FOOTAGES	
NBU	40°00'19.670					2085' FSL	40°00'1		109°29'16.801"	40°00'18.597"	109°29'14.331"	1964' FSL	
922-30L1CS	40.005464°	109.48786	1° 40.00549	9° 109.48	7175°	7831 FWL	40.0051	131°	109.488000°	40.005166°	109.487314°	744' FWL	
NBU 922-30L1BS	40°00'19.722 40.005478°	109°29'16 109.48783			'13.721" 7145°	2090' FSL 792' FWL	40°00'2 40.0062		109°29'16.614" 109.487948°	40°00'22.460" 40.006239°	109°29'14.145" 109.487262°	2355' FSL 759' FWL	
NBU	40°00'19.775	" 109°29'16	.083" 40°00'19	.901" 109°29	13.613"	2096' FSL	40°00'1	5.912"	109°29'16.617"	40°00'16.038"	109°29'14.147"	1705' FSL	
922-30L4BS NBU	40.005493° 40°00'19.827	109.48780 " 109°29'15			7115° '13.503"	800' FWL 2101' FSL	40.0044 40°00'2		109.487949° 109°29'16.609"	40.004455° 40°00'26.531"	109.487263° 109°29'14.139"	758' FWL 2519' FNL	
922-30E4CS	40.005507°	109.48777	0° 40.00554	3° 109.48	7084°	809' FWL	40.0073	335°	109.487947°	40.007370°	109.487261°	760' FWL	
NBU 922-30K4BS	40°00'19.880 40.005522°	109°29'15 109.48 <i>774</i>	I			2106' FSL 817' FWL	40°00'1 40.0048		109°29'00.946" 109.483596°	40°00'17.730" 40.004925°	109°28'58.477" 109.482910°	1872' FSL 1978' FWL	
NBU	40°00'19.932		.755" 40°00'20	.058" 109°29		2112' FSL	40°00'2	9.616"	109.463396* 109°29'16.616"	40°00'29.742"	109.462910 109°29'14.147"	2194' FNL	
922-30E4BS NBU 52J	40.005537° 40°00'20.013	109.48771				826' FWL	40.0082	227°	109.487949°	40.008262°	109.487263°	760' FWL	
NBU 32j	40.005559°	109°29'16''' 109.48796				2120' FSL 754' FWL							
			RELAT	IVE COORD	INATES -	From Surface	Position	to Botto	m Hole				
WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST		NAME	NORT	H EAST	WELL NAM	IE NORTH	EAST	
NBU 922-30L1CS	-121.4'	-39.1'	NBU 922-30L1BS	264.4'	-32.9	NBU 922-30	L4BS	-390.	9' -41.7'	NBU 922-30E4CS	665.8	-49.4'	
WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST		1	1	1			•	
NBU 922-30K4BS	-230.71	1161.1	NBU 922-30E4BS	980.11	-66.8	·	je Š	<b>A</b>				1	
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	SCAL	L			Š	ŠΙ 'Ι	355	-   -	10				
					Č	9.59 	Az=355.76000° 667 61' (To Bott		Bottom Hole =356.10222		W		
					'	557 58 58	$\langle \cdot \rangle$	- o - 125.1	(To Bottom Hole) Az=356.10222°		<b>4 V</b>		
						$C \cap C = C$		. ~~	$\circ$		1		
	_					Z=3 5 B(c 05'	\ \ \	>   ਨੂੰ	(To Az				
						AZ=3 (To B(		24"W 	E Z				
						AZ=352.90036 (To Bottom Hole) N07°05'58"W - 266	A MARCON	4'24"W - 607.3 - 	) 			/	
/						AZ=3 (To Bo) N07°05'		4°14'24"W N03°53	A S				
						AZ=2 (To Be) N07°05'	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	N04°14'24"W 	D. A.				
/			WISTING W	/F11 N.S.		Z  	Will Co.	0 N04°14′24″W 03°53	E &				
		-	existing v	VELL: NBI		Z  	10 to 10 t	0 N04°14′24″W N03°53	E S				
/			EXISTING V	VELL: NBI		Z  	1000	N04°14'24" N03		AZ=10	01.237500		
/		,	EXISTING V	/ELL: NBI		Z  	10000	N04°14'24" N03			01.23750° E - 1102		
<u>/</u>		-	EXISTING W		U <b>52</b> J @	Z  		N04°14'24" N03				1'	
	OF BEARING:	S IS THE W	est line		U <b>52</b> J @	Z  	THE TABLE	N04°14'24" N03	Jan 92		01.23750° E - 1183.8 Om Hole)	1'	
OF THE	E SW <sup>1</sup> / <sub>4</sub> OF SE	S IS THE W CTION 30,	EST LINE T9S, R22E,		U <b>52J</b> @		THE TABLES	N04°14'24" N03	Jan 92			1'	
OF THE S.L.B.&	E SW <sup>1</sup> 4 OF SE M. WHICH IS	S IS THE W CTION 30, S TAKEN FF	est line T9s, R22e, ROM		U <b>52J</b> @		18U 97	N04°14'24" N03	18U 922-30KA	(To Botte	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW <sup>1</sup> / <sub>4</sub> OF SE	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @		18U 97	N04°14'24" N03	180 922 30KABS NA 30KAC	(To Botto	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @	7 Hole) 127-17	18U 97	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @	7 Hole) 127-17	18U 97	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @	7 Hole) 127-17	187 - 25 - 181 - 151 - 1	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @	7 Hole) 127-17	18U 97	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @		- 393.15, - 787 194 195 195 195 195 195 195 195 195 195 195	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)		
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite		U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	om Hole)		
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite	AT 22 S5	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	E - 1183.8 Om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite	AZ 255	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	E - 1183.8 Om Hole)	1'	
OF THE S.L.B.& GLOBA	E SW $\frac{1}{4}$ of SEM. Which IS AL Position	S IS THE W CTION 30, S TAKEN FF ING SATEL	est line T9s, R22e, ROM Lite	AT 22 S5	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	E - 1183.8 Om Hole)		
OF THE S.L.B.& GLOBA OBSER'	E SW 1/4 OF SE M. WHICH IS AL POSITION VATIONS TO	S IS THE W CTION 30, S TAKEN FI ING SATEL D BEAR NOO	EST LINE T9S, R22E, ROM LITE 0°03'18"W.	Bottom of Hole	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	- 393.15, - 787 194 195 195 195 195 195 195 195 195 195 195	100. TO 100 100 100 100 100 100 100 100 100 10	180 922 30KABS NA 30KAC	(To Botto	E - 1183.8 Om Hole)		
OF THE S.L.B.& GLOBA OBSER <sup>V</sup>	E SW 1/4 OF SE M. WHICH IS AL POSITION VATIONS TO	S IS THE W CTION 30, S TAKEN FI ING SATEL D BEAR NOO	EST LINE T9S, R22E, ROM LITE 9°03'18"W.	Bottom of Hole	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	100. TO 100 100 100 100 100 100 100 100 100 10	BU 972-30KARS ALO	(To Botto	E - 1183.8 Om Hole)	1'	
OF THE S.L.B.& GLOBA OBSER' <b>Kerr-Mc</b> ( 1099 1	E SW 1/4 OF SE M. WHICH IS AL POSITION VATIONS TO  State of the second o	S IS THE W CTION 30, S TAKEN FI ING SATEL D BEAR NOO  & Gas ( enver, Colo	EST LINE T9S, R22E, ROM LITE 0°03'18"W.  Dnshore, I	Bottom of Hole	U <b>52J</b> @	$S17^{\circ}50^{\circ}25^{\circ}M + IOle)$ $A2=197.840.25.77$	1 393.15, C.	SOUNCE TO ONE THE NO4°14'24"  SOUNCE TO ONE TO ONE NO4°14'24"  SOUNCE TO ONE TO ONE NO ONE NO ONE TO	AND SOKARS AT 10 CASE WITH SO SOLUTION	To Botto  (To Botto  (	25 - 1183.8 Om Hole)		
OF THE S.L.B.& GLOBA OBSER' <b>Kerr-Mc</b> ( 1099 1	E SW 1/4 OF SE 1-M. WHICH IS NL POSITION VATIONS TO	S IS THE W CTION 30, S TAKEN FI ING SATEL D BEAR NOO  & Gas ( enver, Colo	EST LINE T9S, R22E, ROM LITE 0°03'18"W.  Dnshore, I	Bottom of Hole	U <b>52J</b> @	17°50'25"W Hole) AZ=197.8402.51" W	1 393.15, C.	1	MU 972 30K AS PA 10 CASE WHAN SO STOLL AS PART OF THE PART OF	(To Botto)  (To Bo	25. ————————————————————————————————————	35) 789-1365	
OF THE S.L.B.& GLOBA OBSER' 1099 1	E SW 1/4 OF SE M. WHICH IS AL POSITION VATIONS TO  State of the second o	S IS THE W CTION 30, S TAKEN FI ING SATEL D BEAR NOO  WAR GAS ( CONTROL OF THE COLO  WANTED  WAS THE WAR  WAS	EST LINE T9S, R22E, ROM LITE 0°03'18"W.  Dnshore, I rado 80202 22-30L	Bottom of Hole	U <b>52J</b> @	$S17^{\circ}50^{\circ}25^{\circ}M + IOle)$ $A2=197.840.25.77$	1 393.15, C.	1	MBERLING THE RESIDENCE WITH THE PROPERTY OF TH	(To Botto)	25 - 1183.8 Om Hole)	335) 789-1365 G, INC.	
Kerr-Mc( 1099 1:  WELL WELLS - N	Gee Oil a 8th Street - D LL PAD - L PAD INT NBU 922-30	& Gas (enver, Colon NBU 9	Dnshore, I rado 80202 22-30L	Bottom of Hole	U 52J @	S17°50′25″M Hole)  AZ=197.84032.51′ AZ	S06°05'16"W - 393.15; - 100 Nat 15	THE THE NOA'14'24" AND THE THE NOA'14'24" AND THE NOA'14' AND THE NOA' AND THE NOA'14' AND THE NOA' AND T	MBERL NGINEERIN 209 NORTH SURVEYED:	(To Botto)	Om Hole)  (4 SURVEYING E - 1183.8  (4 SURVEYING ENAL, UTAH 844	35) 789-1365 5, INC.	
Kerr-Mc( 1099 1:  WELL WELLS - NBU	Gee Oil a 8th Street - D L PAD - L PAD INT NBU 922-30 922-3014BS	& Gas (enver, Color NBU 9 ERFEREN L1CS, NBU 922	Dnshore, I rado 80202 22-30L ICE PLAT J 922-30L1BS, 2-30E4CS,	Bottom of Hole	U 52J @	$S17^{\circ}50^{\circ}25^{\circ}M + IOle)$ $A2=197.840.25.77$	(To Bottom Hole)	MA 21 10 12 10 10 10 10 10 10 10 10 10 10 10 10 10	MBERL NGINEERIN 209 NORTH: SURVEYED: -10	(To Botto)	Om Hole)  (4 SURVEYING E - 1183.8  (4 SURVEYING ENAL, UTAH 844	335) 789-1365 G, INC.	
Kerr-Mc( 1099 1  WELL WELLS - N NBU	Gee Oil a 8th Street - D L PAD - L PAD INT NBU 922-30 922-3014BS 922-30K4BS	& Gas ( enver, Colo NBU 9 ERFEREN L1CS, NBU 922 & NBU 922	Dnshore, I rado 80202 22-30L CE PLAT J 922-30E4CS, t2-30E4CS,	Bottom of Hole	CONSU 2155 Nor Sheridan	ST2°50'8'' Hole AZ=197.840.25''. AZ=197.840.25'.75'.	S06°05'16"W - 393.15, — CONTROL TO BOTTOM Hole)	MA 21 10 12 10 10 10 10 10 10 10 10 10 10 10 10 10	MBERL NGINEERIN 209 NORTH SURVEYED: -10 DRAWN:	(To Botto)	SURVEYING E - 1183.8  Om Hole)  (4  SURVEYING ENAL, UTAH 846 BY: M.S.B.	35) 789-1365 5, INC.	
Kerr-Mc( 1099 1  WELL WELLS - N NBU LOCA	Gee Oil a 8th Street - D L PAD - L PAD INT NBU 922-30 922-3014BS	& Gas (enver, Colo NBU 9 ERFERENLICS, NBU 92 & NBU 92 TION 30,	Dnshore, I rado 80202 22-30L ICE PLAT J 922-30L4CS, t2-30E4CS, t2-30E4CS, t2-30E4CS, t2-30E4CS,	Bottom of Hole	CONSU 2155 Nor Sheridar Phone 3	S17 $^{\circ}$ 50 $^{\circ}$ 50 $^{\circ}$ 7 $^{\circ}$ 7 $^{\circ}$ 80 $^{\circ}$ 90 $^{\circ$	S06°05'16"W - 393.15, — CONTROL TO BOTTOM Hole)	180 07-190 04-14'24' AT SOLUTION OF THE DATE OF THE DA	MBERL NGINEERIN 209 NORTH SURVEYED: -10 DRAWN:	To Botto  To Bot	SURVEYING E - 1183.8 Om Hole)  (4 SURVEYING ENAL, UTAH 840 BY: M.S.B. K.O.B. vised:	35) 789-1365 G, INC.	





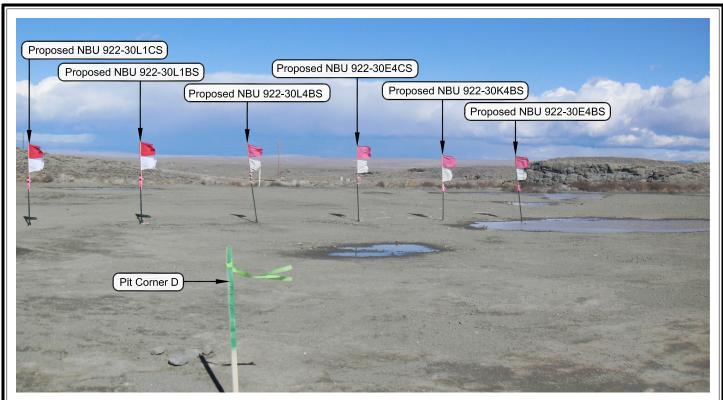


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

**CAMERA ANGLE: NORTHERLY** 



PHOTO VIEW: FROM EXISTING ACCESS ROAD

**CAMERA ANGLE: SOUTHERLY** 

# Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

# WELL PAD - NBU 922-30L

**LOCATION PHOTOS** NBU 922-30L1CS, NBU 922-30L1BS, NBU 922-30L4BS, NBU 922-30E4CS, NBU 922-30K4BS & NBU 922-30E4BS LOCATED IN SECTION 30, T9S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.



# CONSULTING, LLC Sheridan WY 82801

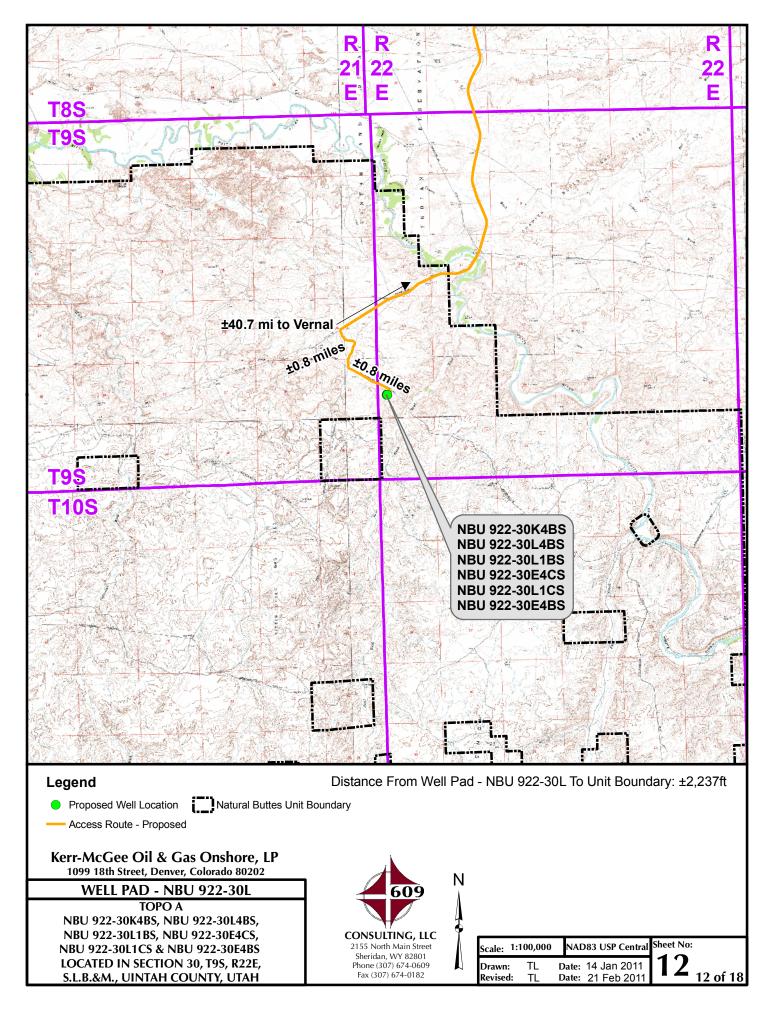
2155 North Main Street Phone 307-674-0609 Fax 307-674-0182

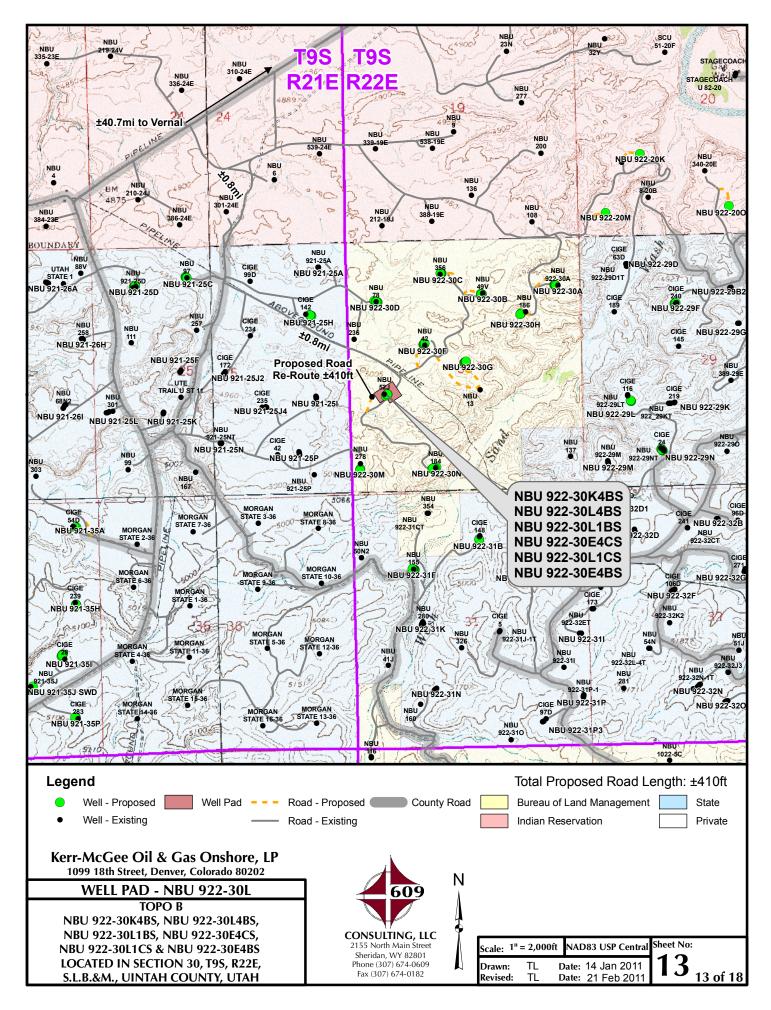
# TIMBERLINE

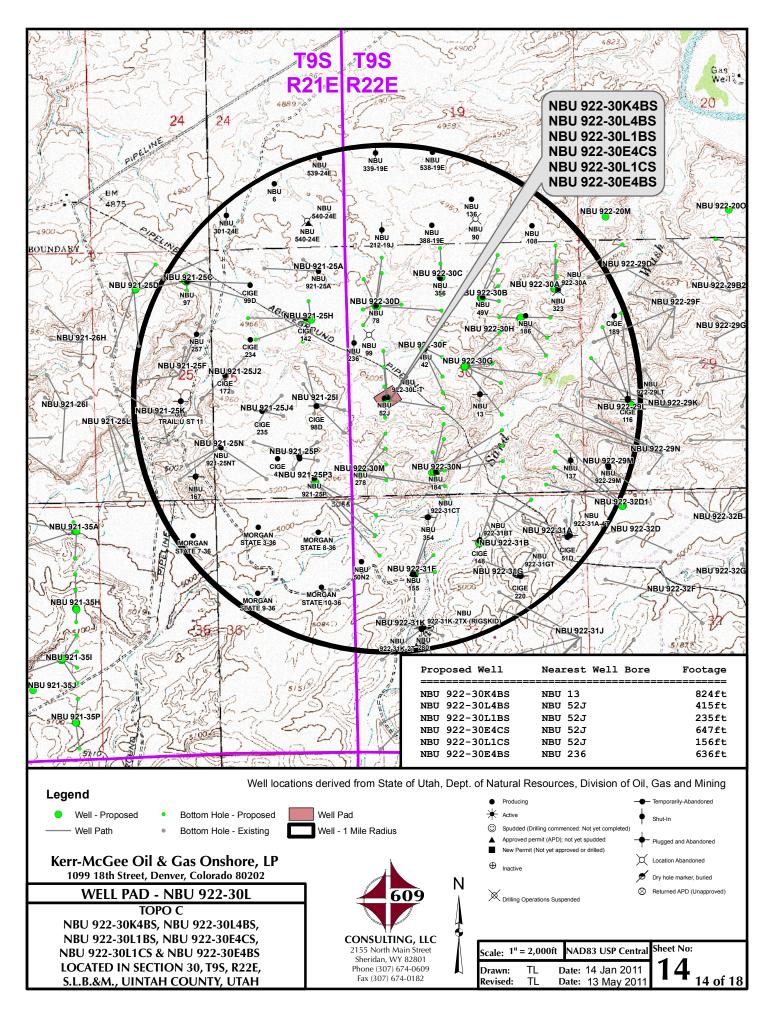
(435) 789-1365

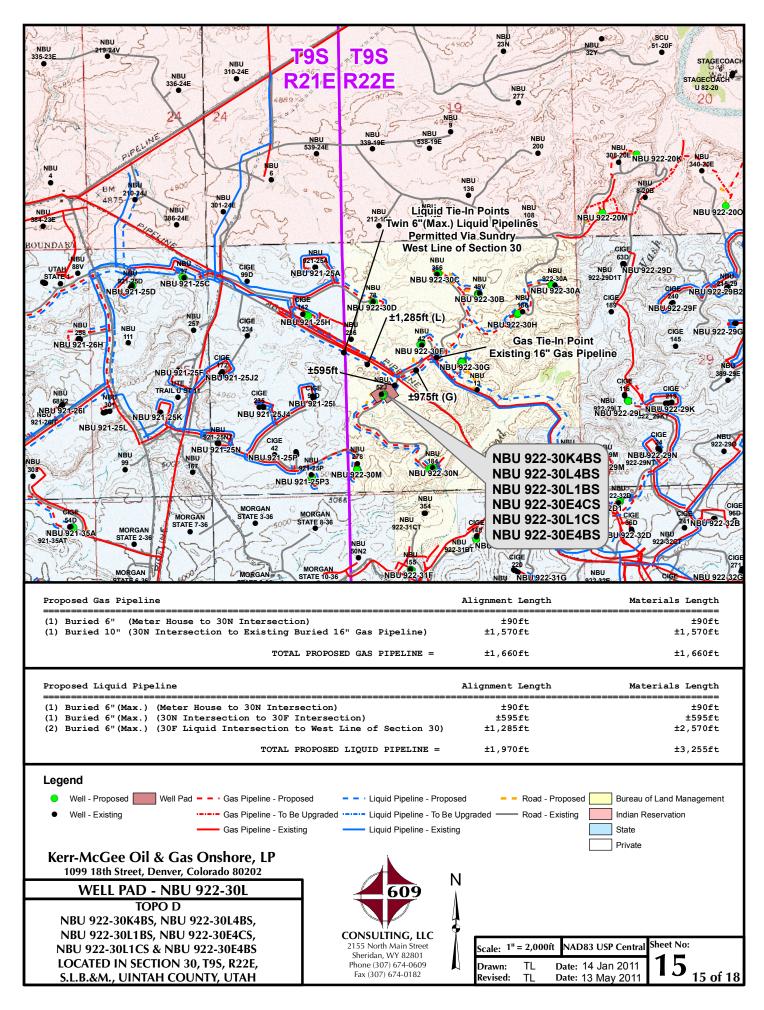
ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078

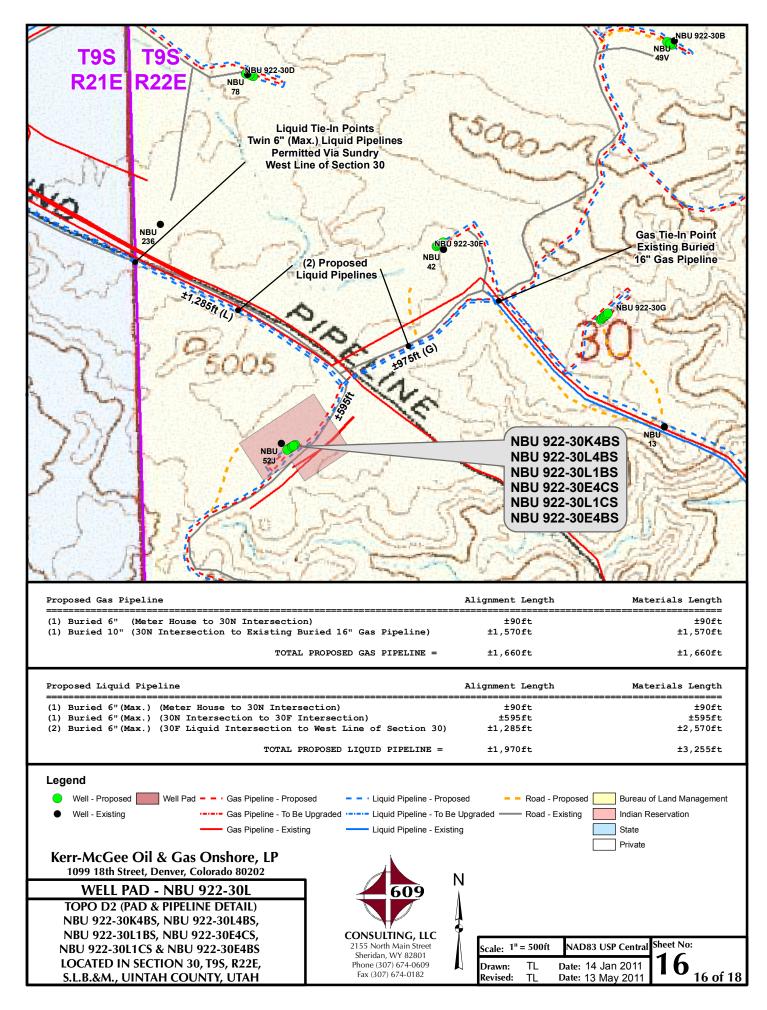
ı	200 11011111 500	TI DOI TENUTEDO	0.0
ı	DATE PHOTOS TAKEN: 07-16-10	PHOTOS TAKEN BY: M.S.B.	SHEET NO:
н	DATE DRAWN: 07-28-10	DRAWN BY: K.O.B.	11
	Date Last Revised: 06-10-1	1 C.T.C.	11 OF 18

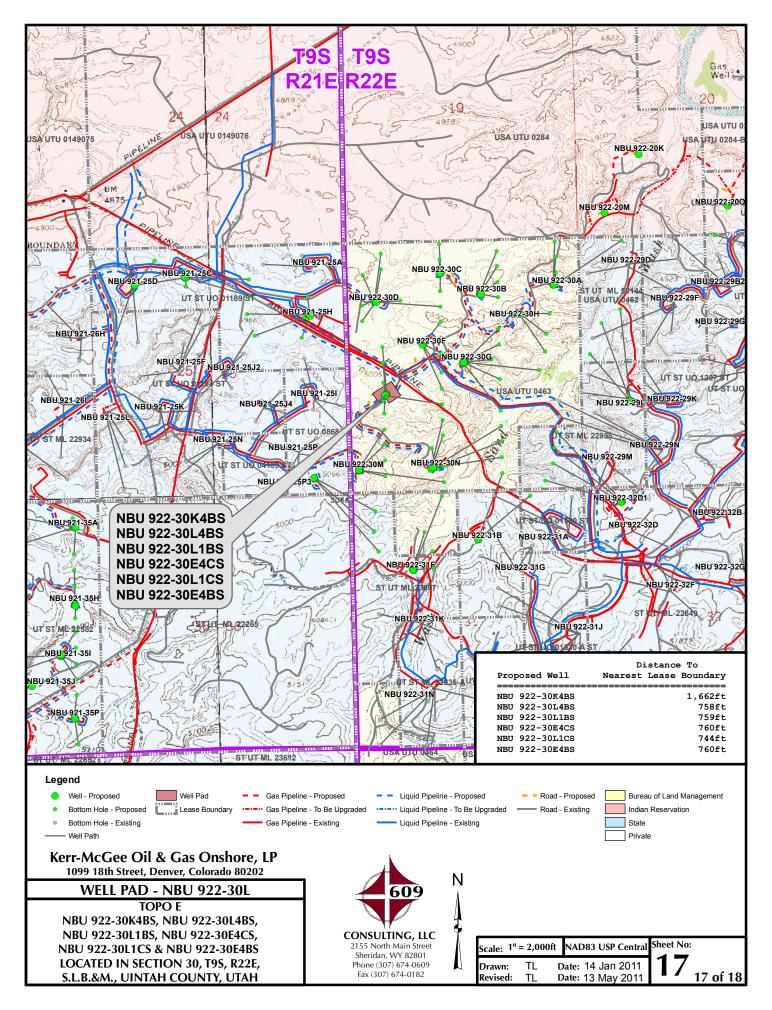










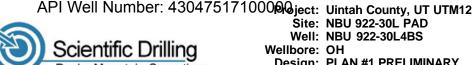


Kerr-McGee Oil & Gas Onshore, LP WELL PAD – NBU 922-30L WELLS – NBU 922-30K4BS, NBU 922-30L4BS, NBU 922-30L1BS, NBU 922-30E4CS, NBU 922-30L1CS & NBU 922-30E4BS Section 30, T9S, R22E, S.L.B.&M.

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.2 miles to a service road to the southeast. Exit left and proceed in a southeasterly, then southerly direction along the service road approximately 0.8 miles to a second service road to the southeast. Exit left and proceed in a southeasterly direction along the second service road approximately 0.8 miles to the proposed well pad.

Total distance from Vernal, Utah to the proposed well location is approximately 42.3 miles in a southerly direction.

**SHEET 18 OF 18** 



Site: NBU 922-30L PAD Well: NBU 922-30L4BS

Wellbore: OH

Design: PLAN #1 PRELIMINARY



Rocky Mountain Operations WELL DETAILS: NBU 922-30L4BS GL 4971' & KB 9' @ 4980.00ft (ASSUMED) +N/-S +E/-W **Northing** Latittude Longitude Easting 0.00 0.00 14531653.59 2064087.16 40° 0' 19.901 N 109° 29' 13.614 W **DESIGN TARGET DETAILS** +E/-W TVD +N/-S Northing **Easting** Latitude Longitude Shape Name 109° 29' 14.147 WCircle (Radius: 25.00 **PBHL** 9528.00 -390.80 -41.45 14531262.15 2064052.34 40° 0' 16.038 N - plan hits target center FORMATION TOP DETAILS CASING DETAILS **TVDPath MDPath Formation** TVD MD Name Size 0.00 1393.00 1403.42 **GREEN RIVER** 2515.00 2540.35 8 5/8" 8.625 4650.00 4679.76 **WASATCH** 0.00 7311.76 **MESAVERDE** 0.00 7282.00 **SECTION DETAILS VSect** MD Inc Azi TVD +N/-S +E/-W **Dleg TFace** 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 300.00 0.00 0.00 300.00 0.00 0.00 0.00 0.00 0.00 764.80 -37.41 -3.97 2.00 186.06 9.30 186.06 762.76 37.62 2698.56 9.30 186.06 2671.13 -348.04 -36.92 0.00 0.00 349.99 0.00 3200.00 3229.76 0.00 -390.80 -41.45 1.75 180.00 392.99 0.00 0.00 9528.00 -390.80 -41.45 0.00 9557.76 0.00 392.99 PBHL NBU 922-30L4BS PROJECT DETAILS: Uintah County, UT UTM12 Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US

Ellipsoid: Clarke 1866

Zone: Zone 12N (114 W to 108 W)

Location: SECTION 30 T9S R22E

System Datum: Mean Sea Level

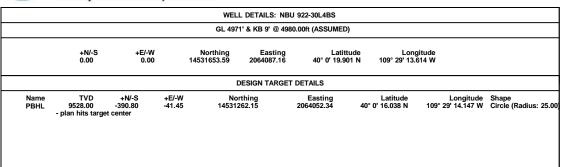
API Well Number: 43047517100000ject: Uintah County, UT UTM12 Scientific Drilling Rocky Mountain Operations

Site: NBU 922-30L PAD Well: NBU 922-30L4BS

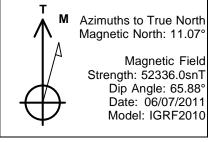
Wellbore: OH

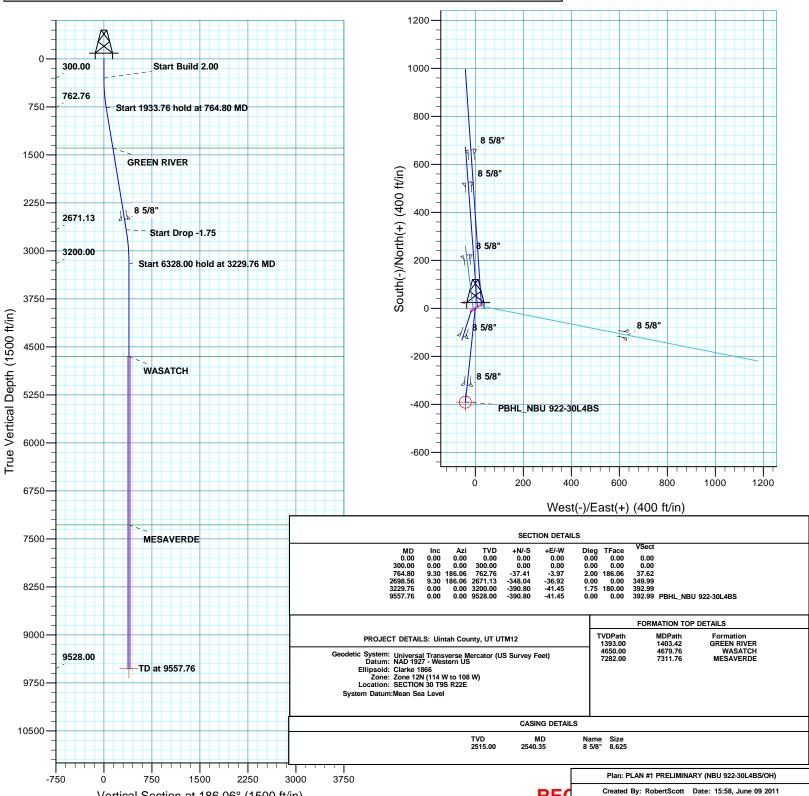
Design: PLAN #1 PRELIMINARY





Vertical Section at 186.06° (1500 ft/in)







# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 922-30L PAD NBU 922-30L4BS

ОН

Plan: PLAN #1 PRELIMINARY

# **Standard Planning Report**

14 June, 2011



RECEIVED: June 21, 2011



# **SDI**Planning Report



Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12
Site: NBU 922-30L PAD

Well: NBU 922-30L4BS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 922-30L4BS

GL 4971' & KB 9' @ 4980.00ft (ASSUMED) GL 4971' & KB 9' @ 4980.00ft (ASSUMED)

True

Minimum Curvature

Project Uintah County, UT UTM12

Map System: Universal Transverse Mercator (US Survey Feet)

 Geo Datum:
 NAD 1927 - Western US

 Map Zone:
 Zone 12N (114 W to 108 W)

System Datum: Mean Sea Level

Site NBU 922-30L PAD, SECTION 30 T9S R22E

Northing: 14,531,642.75 usft Site Position: Latitude: 40° 0' 19.796 N From: Lat/Long Easting: 2,064,070.53 usft Longitude: 109° 29' 13.830 W **Position Uncertainty:** 0.00 ft Slot Radius: **Grid Convergence:** 0.97 13.200 in

Well NBU 922-30L4BS, 2096 FSL 800 FWL

 Well Position
 +N/-S
 10.56 ft
 Northing:
 14,531,653.60 usft
 Latitude:
 40° 0' 19.901 N

 +E/-W
 16.81 ft
 Easting:
 2,064,087.15 usft
 Longitude:
 109° 29' 13.614 W

Position Uncertainty 0.00 ft Wellhead Elevation: Ground Level: 4,971.00 ft

Wellbore ОН Magnetics **Model Name** Sample Date Declination Dip Angle Field Strength (nT) (°) (°) IGRF2010 06/07/2011 11.07 65.88 52.336

PLAN #1 PRELIMINARY Design Audit Notes: Version: Phase: PLAN Tie On Depth: 0.00 **Vertical Section:** Depth From (TVD) +N/-S +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 186.06

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
764.80	9.30	186.06	762.76	-37.41	-3.97	2.00	2.00	0.00	186.06	
2,698.56	9.30	186.06	2,671.13	-348.04	-36.92	0.00	0.00	0.00	0.00	
3,229.76	0.00	0.00	3,200.00	-390.80	-41.45	1.75	-1.75	0.00	180.00	
9,557.76	0.00	0.00	9,528.00	-390.80	-41.45	0.00	0.00	0.00	0.00 1	PBHL_NBU 922-30L4



# **SDI** Planning Report



Database: Company:

Project:

EDM5000-RobertS-Local

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12 NBU 922-30L PAD

 Site:
 NBU 922-30L PAD

 Well:
 NBU 922-30L4BS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 922-30L4BS

GL 4971' & KB 9' @ 4980.00ft (ASSUMED) GL 4971' & KB 9' @ 4980.00ft (ASSUMED)

True

Minimum Curvature

ed Survey								<del>-</del>	
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
				0.00					
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.	.00								
400.00	2.00	186.06	399.98	-1.74	-0.18	1.75	2.00	2.00	0.00
400.00	2.00	100.00	000.00		0.10	1.70	2.00		0.00
500.00	4.00	186.06	499.84	-6.94	-0.74	6.98	2.00	2.00	0.00
600.00	6.00	186.06	599.45	-15.61	-1.66	15.69	2.00	2.00	0.00
700.00	8.00	186.06	698.70	-27.72	-2.94	27.88	2.00	2.00	0.00
764.80	9.30	186.06	762.76	-37.41	-3.97	37.62	2.00	2.00	0.00
			702.70	-57.41	-3.51	37.02	2.00	2.00	0.00
	hold at 764.80								
800.00	9.30	186.06	797.50	-43.07	-4.57	43.31	0.00	0.00	0.00
000.00	0.00	100.00	000.40	EO 40	0.07	EO 40	0.00	0.00	0.00
900.00	9.30	186.06	896.19	-59.13	-6.27	59.46	0.00	0.00	0.00
1,000.00	9.30	186.06	994.87	-75.19	-7.98	75.62	0.00	0.00	0.00
1,100.00	9.30	186.06	1,093.56	-91.26	-9.68	91.77	0.00	0.00	0.00
1,200.00	9.30	186.06	1,192.25	-107.32	-11.38	107.92	0.00	0.00	0.00
1,300.00	9.30	186.06	1,290.93	-123.38	-13.09	124.08	0.00	0.00	0.00
,									
1,400.00	9.30	186.06	1,389.62	-139.45	-14.79	140.23	0.00	0.00	0.00
1,403.42	9.30	186.06	1,393.00	-140.00	-14.85	140.78	0.00	0.00	0.00
GREEN RIVE	R								
1,500.00	9.30	186.06	1,488.31	-155.51	-16.50	156.38	0.00	0.00	0.00
1,600.00	9.30	186.06	1,586.99	-171.57	-18.20	172.54	0.00	0.00	0.00
1,700.00	9.30	186.06	1,685.68	-187.64	-19.90	188.69	0.00	0.00	0.00
1,800.00	9.30	186.06	1,784.37	-203.70	-21.61	204.84	0.00	0.00	0.00
1,900.00	9.30	186.06	1,883.06	-219.76	-23.31	221.00	0.00	0.00	0.00
2,000.00	9.30	186.06	1,981.74	-235.83	-25.02	237.15	0.00	0.00	0.00
2,100.00	9.30	186.06	2,080.43	-251.89	-26.72	253.30	0.00	0.00	0.00
2,200.00	9.30	186.06	2,179.12	-267.95	-28.42	269.46	0.00	0.00	0.00
2,300.00	9.30	186.06	2,277.80	-284.02	-30.13	285.61	0.00	0.00	0.00
,									
2,400.00	9.30	186.06	2,376.49	-300.08	-31.83	301.76	0.00	0.00	0.00
2,500.00	9.30	186.06	2,475.18	-316.14	-33.54	317.92	0.00	0.00	0.00
2,540.35	9.30	186.06	2,515.00	-322.63	-34.22	324.44	0.00	0.00	0.00
8 5/8"									
2,600.00	9.30	186.06	2,573.86	-332.21	-35.24	334.07	0.00	0.00	0.00
2,698.56	9.30	186.06	2,671.13	-348.04	-36.92	349.99	0.00	0.00	0.00
Start Drop -1	.75								
2,700.00	9.27	186.06	2,672.55	-348.27	-36.94	350.22	1.75	-1.75	0.00
			2,771.47	-362.79		364.82	1.75		
2,800.00	7.52	186.06	,		-38.48			-1.75	0.00
2,900.00	5.77	186.06	2,870.80	-374.30	-39.70	376.40	1.75	-1.75	0.00
3,000.00	4.02	186.06	2,970.43	-382.78	-40.60	384.93	1.75	-1.75	0.00
3,100.00	2.27	186.06	3,070.27	-388.24	-41.18	390.42	1.75	-1.75	0.00
,			,						
3,200.00	0.52	186.06	3,170.24	-390.66	-41.44	392.85	1.75	-1.75	0.00
3,229.76	0.00	0.00	3,200.00	-390.80	-41.45	392.99	1.75	-1.75	0.00
Start 6328.00	hold at 3229.76	MD							
3,300.00	0.00	0.00	3,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
3,400.00	0.00	0.00	3,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
3,500.00	0.00	0.00	3,470.24	-390.80	-41.45	392.99	0.00	0.00	0.00
3,600.00	0.00	0.00	3,570.24	-390.80	-41.45	392.99	0.00	0.00	0.00
3,700.00	0.00	0.00	3,670.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,7 00.00	0.00	0.00	3,770.24	-390.80	-41.45	392.99	0.00	0.00	0.00
3 800 00	U.UU	0.00	3,110.24						
3,800.00			0.070.01	222 22	4.4 4-				
3,800.00 3,900.00	0.00	0.00	3,870.24	-390.80	-41.45	392.99	0.00	0.00	0.00
,		0.00 0.00	3,870.24 3,970.24	-390.80 -390.80	-41.45 -41.45	392.99 392.99	0.00	0.00 0.00	0.00



# **SDI** Planning Report



Database: ED Company: Ker

Project:

EDM5000-RobertS-Local

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12 NBU 922-30L PAD

 Site:
 NBU 922-30L PAD

 Well:
 NBU 922-30L4BS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 922-30L4BS

GL 4971' & KB 9' @ 4980.00ft (ASSUMED) GL 4971' & KB 9' @ 4980.00ft (ASSUMED)

True

Minimum Curvature

Design:	FLAN#1 FRE	LIMITO (IXI							
Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	0.00	0.00	4,170.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,300.00	0.00	0.00	4,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,400.00	0.00	0.00	4,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,500.00	0.00	0.00	4,470.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,600.00	0.00	0.00	4,570.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,679.76	0.00	0.00	4,650.00	-390.80	-41.45	392.99	0.00	0.00	0.00
<b>WASATCH</b> 4,700.00	0.00	0.00	4,670.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,800.00	0.00	0.00	4,770.24	-390.80	-41.45	392.99	0.00	0.00	0.00
4,900.00	0.00	0.00	4,870.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,000.00	0.00	0.00	4,970.24	-390.80	-41.45 -41.45	392.99	0.00	0.00	0.00
5,100.00	0.00	0.00	5,070.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,200.00	0.00	0.00	5,170.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,300.00	0.00	0.00	5,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,400.00	0.00	0.00	5,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,500.00	0.00	0.00	5,470.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,600.00	0.00	0.00	5,570.24	-390.80	-41.45	392.99	0.00	0.00	0.00
5,700.00	0.00	0.00	5,670.24	-390.80	-41.45	392.99 392.99	0.00	0.00	0.00
5,800.00	0.00	0.00	5,770.24	-390.80	-41.45		0.00	0.00	0.00
5,900.00	0.00	0.00	5,870.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,000.00 6,100.00	0.00 0.00	0.00 0.00	5,970.24 6,070.24	-390.80 -390.80	-41.45 -41.45	392.99 392.99	0.00 0.00	0.00 0.00	0.00 0.00
6,200.00	0.00	0.00	6,170.24	-390.80	-41.45 -41.45	392.99	0.00	0.00	0.00
6,300.00	0.00	0.00	6,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,400.00	0.00	0.00	6,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,500.00	0.00	0.00	6,470.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,600.00	0.00	0.00	6,570.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,700.00	0.00	0.00	6,670.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,800.00	0.00	0.00	6,770.24	-390.80	-41.45	392.99	0.00	0.00	0.00
6,900.00	0.00	0.00	6,870.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,000.00	0.00	0.00	6,970.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,100.00	0.00	0.00	7,070.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,200.00 7,300.00	0.00 0.00	0.00 0.00	7,170.24 7,270.24	-390.80 -390.80	-41.45 -41.45	392.99 392.99	0.00 0.00	0.00 0.00	0.00 0.00
7,311.76	0.00	0.00	7,282.00	-390.80	-41.45	392.99	0.00	0.00	0.00
<b>MESAVERDE</b> 7,400.00	0.00	0.00	7,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,500.00	0.00	0.00	7,370.24 7,470.24	-390.80	-41.45 -41.45	392.99	0.00	0.00	0.00
7,600.00	0.00	0.00	7,570.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,700.00	0.00	0.00	7,670.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,800.00	0.00	0.00	7,770.24	-390.80	-41.45	392.99	0.00	0.00	0.00
7,900.00	0.00	0.00	7,870.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,000.00	0.00	0.00	7,970.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,100.00	0.00	0.00	8,070.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,200.00	0.00	0.00	8,170.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,300.00	0.00	0.00	8,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,400.00	0.00	0.00	8,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
8,500.00 8.600.00	0.00 0.00	0.00 0.00	8,470.24 8,570.24	-390.80 -390.80	-41.45 -41.45	392.99 392.99	0.00 0.00	0.00 0.00	0.00 0.00
8,700.00	0.00	0.00	8,670.24	-390.80	-41.45 -41.45	392.99	0.00	0.00	0.00
8,800.00	0.00	0.00	8,770.24	-390.80		392.99	0.00	0.00	0.00
8,800.00	0.00	0.00	8,770.24 8,870.24	-390.80 -390.80	-41.45 -41.45	392.99 392.99	0.00	0.00	0.00
9,000.00	0.00	0.00	8,970.24	-390.80	-41.45	392.99	0.00	0.00	0.00
9,100.00	0.00	0.00	9,070.24	-390.80	-41.45	392.99	0.00	0.00	0.00



# SDI Planning Report



Database: Company: EDM5000-RobertS-Local

Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12 NBU 922-30L PAD Site:

Well: NBU 922-30L4BS Wellbore: ОН

Design: PLAN #1 PRELIMINARY Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

**Survey Calculation Method:** 

Well NBU 922-30L4BS

GL 4971' & KB 9' @ 4980.00ft (ASSUMED) GL 4971' & KB 9' @ 4980.00ft (ASSUMED)

True

Minimum Curvature

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,200.00	0.00	0.00	9,170.24	-390.80	-41.45	392.99	0.00	0.00	0.00
9,300.00	0.00	0.00	9,270.24	-390.80	-41.45	392.99	0.00	0.00	0.00
9,400.00	0.00	0.00	9,370.24	-390.80	-41.45	392.99	0.00	0.00	0.00
9,500.00	0.00	0.00	9,470.24	-390.80	-41.45	392.99	0.00	0.00	0.00
9.557.76	0.00	0.00	9.528.00	-390.80	-41.45	392.99	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 922-30L4B\$ - plan hits target cent - Circle (radius 25.00		0.00	9,528.00	-390.80	-41.45	14,531,262.15	2,064,052.34	40° 0' 16.038 N	109° 29' 14.147 W

Casing Points						
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter	
	(ft)	(ft)	Name	(in)	(in)	
	2,540.35	2,515.00 8 5/8"		8.625	11.000	

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,403.42	1,393.00	GREEN RIVER		0.00	
	4,679.76	4,650.00	WASATCH		0.00	
	7,311.76	7,282.00	MESAVERDE		0.00	

Plan Annotations				
Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
300.0	0 300.00	0.00	0.00	Start Build 2.00
764.8	0 762.76	-37.41	-3.97	Start 1933.76 hold at 764.80 MD
2,698.5	6 2,671.13	-348.04	-36.92	Start Drop -1.75
3,229.7	6 3,200.00	-390.80	-41.45	Start 6328.00 hold at 3229.76 MD
9,557.7	6 9,528.00	-390.80	-41.45	TD at 9557.76

NBU 922-30L Pad Surface Use Plan of Operations 1 of 13

# Kerr-McGee Oil & Gas Onshore. L.P.

# **NBU 922-30L Pad**

<u>API #</u>	NBU 922-30E4BS				
	Surface:	2112 FSL / 826 FWL	NWSW	Lot 3	
	BHL:	2194 FNL / 760 FWL	SWNW	Lot 2	
<u>API #</u>	N	IBU 922-30E4CS	=		
	Surface:	2101 FSL / 809 FWL	NWSW	Lot 3	
	BHL:	2519 FNL / 760 FWL	SWNW	Lot 2	
API#	N	IBU 922-30K4BS			
<u> </u>	Surface:	2106 FSL / 817 FWL	NWSW	Lot 3	
	BHL:	1872 FSL / 1978 FWL	NESW	Lot	
A D1 //		IDLL 000, 2014DC			
<u>API #</u>		IBU 922-30L1BS	_		
	Surface:	2090 FSL / 792 FWL	NWSW	Lot 3	
	BHL:	2355 FSL / 759 FWL	NWSW	Lot 3	
API #4304739540	API #4304739540 NBU 922-30L1CS				
	Surface:	2085 FSL / 783 FWL	NWSW	Lot 3	
	BHL:	1964 FSL / 744 FWL	NWSW	Lot 3	
API#	N	IBU 922-30L4BS			
<u> </u>	Surface:	2096 FSL / 800 FWL	NWSW	Lot 3	
	BHL:	1705 FSL / 758 FWL	NWSW		
	BHL:	1700 F3L / 738 FVVL	1444244	Lot 3	

This Surface Use Plan of Operations (SUPO) or 13-point plan provides site-specific information for the above-referenced wells.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

An on-site meeting was held on May 5, 2011. Present were:

- · David Gordon, Melissa Wardle, Karl Wright and Dan Emmett BLM; and
- John Slaugh and Mitch Batty Timberline Engineering & Land Surveying, Inc.; and
- · Jacob Dunham 609 Consulting, LLC; and
- · Andy Lytle, Charles Chase, Ken Gathings, Roger Parry, Grizz Oleen, and Sheila Wopsock Kerr-McGee

# A. Existing Roads:

Existing roads consist of county and improved/unimproved access roads (two-tracks). In accordance with Onshore Order #1, Kerr-McGee will, in accordance with BMPs, improve or maintain existing roads in a condition that is the same as or better than before operations began. New or reconstructed proposed access roads are discussed in Section B.

NBU 922-30L Pad Surface Use Plan of Operations 2 of 13

The existing roads will be maintained in a safe and usable condition. Maintenance for existing roads will continue until final abandonment and reclamation of well pads and/or other facilities, as applicable. Road maintenance will include, but is not limited to, blading, ditching, and/or culvert installation and cleanout. To ensure safe operating conditions, gravel surfacing will be performed where excessive rutting or erosion may occur. Dust control will be performed as necessary to ensure safe operating conditions.

Roads, gathering lines and electrical distribution lines will occupy common disturbance corridors where possible. Where available, roadways will be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor will overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Please refer to Topo B, for existing roads.

No segments require a ROW.

#### B. New or Reconstructed Access Roads:

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BLM. BMPs. Described in the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007) and/or BLM Manual Section 9113 (1985) will be considered in consultation with the BLM in the design, construction, improvement and maintenance of all new or reconstructed roads. If a new road would cross a water of the United States, Kerr-McGee will adhere to the requirements of applicable Nationwide Permits of the Department of Army Corps of Engineers.

Each new well pad or pad expansion may require construction of a new access road and/or de-commissioning of an older road. Plans, routes, and distances for new roads and road improvements are provided in design packages, exhibits and maps for a project. Project-specific maps are submitted to depict the locations of existing, proposed, and/or decommissioned and include the locations for supporting structures, including, but not limited to, culverts,

bridges, low water crossings, range infrastructure, and haul routes, as per OSO 1. Designs for cuts and fills, including spoils source and storage areas, are provided with the road designs, as necessary.

Where safety objectives can be met. As applicable, Kerr-McGee may use unimproved and/or two-track roads for lease operations, to lessen total disturbance.

Road designs will be based on the road safety requirements, traffic characteristics, environmental conditions, and the vehicles the road is intended to carry. Generally, newly constructed unpaved lease roads will be crowned and ditched with the running surfaces of the roads approximately 12-18 feet wide and a total road-utility corridor width not to exceed 45 feet, except where noted in the road design for a specific project. Maximum grade will generally not exceed 8%. Borrow ditches will be back sloped 3:1 or less. Construction BMPs will be employed to control onsite and offsite erosion.

Where topography would direct storm water runoff to an access road or well pad, drainage ditches or other common drainage control facilities, such as V- or wing-ditches, will be constructed to divert surface water runoff. Drainage features, including culverts, will be constructed or installed prior to commencing other operations, including drilling or facilities placement. Riprap will be placed at the inlet and outlet at the culvert(s) adjacent to the well pad, as necessary.

NBU 922-30L Pad Surface Use Plan of Operations 3 of 13

Prior to construction, new access road(s) will be staked according to the requirements of OSO 1. Construction activity will not be conducted using frozen or saturated materials or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur. Vegetative debris will not be placed in or under fill embankments.

New road maintenance will include, but is not limited to, blading, ditching, culvert installation and cleanout, gravel surfacing where excessive rutting or erosion may occur and dust control, as necessary to ensure safe operating conditions. All vehicular traffic, personnel movement, construction/restoration operations will be confined to the approved area and to existing roadways and/or access routes.

Snow removal will be conducted on an as-needed basis to accommodate safe travel. Snow removal will occur as necessary throughout the year, as will necessary drainage ditch construction. Removed snow may be stored on permitted well pads to reduce hauling distances and/or at the aerial extent of approved disturbance boundaries to facilitate snow removal for the remainder of the season.

If a county road crossing or encroachment permit is needed, it will be obtained prior to construction.

The following segments are "on-lease"

 $\pm410'$  (0.08 miles) – Section 30 T09S R22E (NW/4 SW/4) – On-lease UTU0463, re-route from the SW corner of the pad to the existing access road. Please refer to Topo B.

#### C. Location of Existing Wells:

A) Refer to Topo Map C.

#### D. Location of Existing and/or Proposed Facilities:

This pad will expand the existing pad for the NBU 52J, which is a producing gas well according to Utah Division of Oil, Gas and Mining (UDOGM) records on June 2, 2011. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

Should the well(s) prove productive, production facilities will be installed on the disturbed portion of each well pad. A berm will be constructed completely around production components that contain fluids (i.e. production tanks, produced liquids tanks, but typically excluding dehy's and/or separators). The berms will generally be constructed of compacted subsoil or corrugated metal, and will hold the capacity of the largest tank and have sufficient freeboard to accomodate a 25 year rainfall event, and be independent of the back cut. This includes pumping units. Aboveground structures constructed or installed onsite for 6 months or longer will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with the BLM (typically Shadow Gray). A production facility layout is provided as part of a project-specific APD, ROW or NOS submission.

structures constructed or installed onsite for 6 months or longer, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with the BLM (typically Shadow Gray). A production facility layout is provided as part of a project-specific APD, ROW or NOS submission.

# **GAS GATHERING**

Please refer to Exhibit A and Topo D- Pad and Pipeline Detail.

The gas gathering pipeline material: Steel line pipe. Surface = Bare pipe. Buried = Coated with fusion bonded epoxy coating (or equivalent). The total gas gathering pipeline distance from the meter to the tie in point is  $\pm 1,660$ ° and the individual segments are broken up as follows:

NBU 922-30L Pad Surface Use Plan of Operations 4 of 13

#### The following segments are "onlease", no ROW needed.

- ±90' (0.01 miles) Section 30 T09S R22E (NW/4 SW/4) On-lease UTU0463, BLM surface, New 6" buried gas gathering pipeline from the meter to the 30N intersection. Please refer to Topo D2 Pad and Pipeline Detail.
- ±1,570' (0.3 miles) Section 30 T09S R22E (NW/4 SW/4) On-lease UTU0463, BLM surface, New 10" buried gas pipeline from the 30N intersection to the existing 16" gas pipeline (SE/4 NW/4). Please refer to Exhibit A, Line 13. This pipeline will be used concurrently with the 30N pad.

#### CATHODIC PROTECTION SITE

Section 30 T09S R22E (NE/4 SW/4) 2474' FSL & 1186' FWL

Deep well ground bed and Cathodic Protection equipment will be installed within the pipeline route to protect the integrity of the pipeline(s). A buried power line approximately 120 Volts +/- will be constructed from the existing overhead power line to a rectifier. The rectifier, which is approximately 3' X 4' +/-, will convert the AC power to DC power; it is then connected to the buried pipeline(s) to protect it from corrosion. Please see attached plat, location layout, typical set-up, and Topo B map.

#### **LIQUID GATHERING**

Please refer to Exhibit B and Topo D- Pad and Pipeline Detail.

Kerr-McGee proposes to install liquid gathering lines in a southwesterly direction to tie into a proposed southeasterly flowing buried pipeline. The total of this proposed liquid gathering from the meter to the Section lease line (SE/4 SE/4) is  $\pm 6,590'$  and the individual segments are broken up as follows:

#### The following segments are "onlease", no ROW needed.

- ±90' (0.01 miles) Section 30 T09S R22E (NW/4 SW/4) On-lease UTU0463, BLM surface, New 6" buried liquid gathering pipeline from the separator to the 30N intersection. Please refer to Topo D2 Pad and Pipeline Detail.
- ±595' (0.12 miles) Section 30 T09S R22E (NW/4 SW/4) Lease UTU0463, BLM surface, New 6" buried liquid gathering pipeline from the 30N intersection to the proposed 30F intersection (NW/4 SW/4). Please refer to Exhibit B, Line 16. This pipeline will be used concurrently with the 30N pad.
- $\pm 1,010^{\circ}$  (0.19 miles) Section 30 T09S R22E (SE/4 NW/4) Lease UTU0463, BLM surface, Two (2) new 6" buried liquid gathering pipelines from the proposed 30G Intersection to the proposed 30L intersection (SE/4 NW/4). Please refer to Exhibit B, Line 2. This pipeline will be used concurrently with the 30H, 30C, 30B, 30F, 30G, 30A, and 30N pads. Two (2) lines for a total of 2,020'.
  - ±495' (0.09 miles) Section 30 T09S R22E (SE/4 NW/4) Lease UTU0463, BLM surface, Two (2) new 6" buried liquid gathering pipelines from the proposed Transfer line to the tie-in point at the proposed 30G/30F intersection (SW/4 NE/4). Please refer Exhibit B, Line 13. This pipeline will be used concurrently with the 30H, 30C, 30B, 30F, 30G, 30A, and 30N pads. Two (2) Lines for a total of 990'.
- ±2,895' (0.55 miles) Section 30 T09S R22E (SW/4 NE/4) Lease UTU0463, BLM surface, New 6" buried liquid gathering pipeline from the proposed 30G/30F intersection going southeast to the edge of the lease boundry of SE/4 SE/4. Please refer to Exhibit B, Line 15. The remaining liquid pipeline segment will travel to the existing tank battery on State surface. Kerr-McGee will apply for the appropriate State easements under separate cover. This pipeline will be used concurrently with the 30H, 30C, 30B, 30F, 30G, 30A, and 30N pads.

NBU 922-30L Pad Surface Use Plan of Operations 5 of 13

Kerr-McGee, additionally will install a liquid gathering line in a southwesterly direction to tie-into a proposed northwesterly flowing buried pipeline. The total of this proposed liquid gathering from the meter to the tie in point is  $\pm 3,255$ ' and the individual segments are broken up as follows:

#### The following segments are "onlease", no ROW needed.

- ±90' (0.01 miles) Section 30 T09S R22E (NW/4 SW/4) On-lease UTU0463, BLM surface, New 6" buried liquid gathering pipeline from the separator to the 30N intersection. Please refer to Topo D2 Pad and Pipeline Detail.
- ±595' (0.12 miles) Section 30 T09S R22E (NW/4 SW/4) Lease UTU0463, BLM surface, New 6" buried liquid gathering pipeline from the 30N intersection to the proposed 30F intersection (NW/4 SW/4). Please refer to Exhibit B, Line 16. This pipeline will be used concurrently with the 30N pad.
- ±1,285' (0.24 miles) Section 30 T09S R22E (NW/4 SW/4) Lease UTU0463, BLM surface, Two (2) new 6" buried liquid gathering pipelines from the proposed 30L Intersection to the West Line of Section 30 where it will tie-into an existing liquid gathering pipeline on State surface. Please refer to Exhibit B, Line 1. Two (2) lines for a total of 2,570'. This pipeline will be used concurrently with the 30H, 30C, 30B, 30F, 30G, 30A, and 30N pads.

#### **Pipeline Gathering Construction**

Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr-McGee. Gas gathering pipeline(s,) gas lift, or liquids pipelines may be constructed to lie on the surface or be buried. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. The area of disturbance during construction from the edge of road or well pad will typically be 30' in width. Where pipelines run cross country, the width of disturbance will typically be 45' for buried lines and 30' for surface lines. In addition, Kerr-McGee requests for a permanent 30' distrubance width that will be maintained for the portion adjacent to the road. The need for the 30' permanent distrubance width is for maintenance and repairs. Cross country permanent distrubance width also are required to be 30'.

Above-ground installation will generally not require clearing of vegetation or blading of the surface, except where safety considerations necessitate earthwork. In some surface pipeline installation instances pipe cannot be constructed where it will lay. In these cases where an above-ground pipeline is constructed parallel and adjacent to a road, it will be welded/fused on the road and then lifted from the road to the pipeline route. In other cases where a pipeline route is not parallel and adjacent to a road (cross-country between sites), it will be welded/fused in place at a well pad, access road, or designated work area and pulled between connection locations with a suitable piece of equipment.

Buried pipelines will generally be installed parallel and adjacent to existing and/or newly constructed roads and within the permitted disturbance corridor. Buried pipelines may vary from 2 inches (typically fuel gas lines) to 24 inches (typically transportation lines) in diameter, but 6 to 16 inches is typical for a buried gas line. The diameter of liquids pipelines may vary from 2 inches to 12 inches, but 6 inches is the typical diameter. Gas lift lines may vary from 2 to 12 inches in diameter, but 6-inch diameter pipes are generally used for gas lift. If all three lines are present (gas gathering, gas lift, and fluids), they will share a common trench where possible.

Typically, to install a buried pipeline, topsoil will be removed, windrowed and placed on the non-working side of the route for later reclamation. Because working room is limited, the spoil may be spread out across the working side and construction will take place on the spoil. The working side of the corridor will be used for pipe stringing, bending, welding and equipment travel. Small areas on the working side displaying ruts or uneven ground will be groomed to facilitate the safe passage of equipment. After the pipelines are installed, spoil will be placed back into the trench, and the topsoil will be redistributed over the disturbed corridor prior to final reclamation. Typical depth of the trench will be 6 feet, but depths may vary according to site-specific conditions (presence of bedrock, etc.). The proposed trench width for the pipeline would range from 18-48 inches.

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The pipeline will be welded along the proposed route and lowered into place. Trenching equipment will cut through the soil or into the bedrock and create good backfill, eliminating the need to remove large rocks. The proposed buried pipeline will be visually and radiographically inspected and the entire pipeline will be pneumatically or hydrostatically tested before being placed into service. Routine vehicle traffic will be prevented from using pipeline routes as travel ways by posting signs at the route's intersection with an access road.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, Kerr-McGee will apply all applicable Army Corps mandates as well as the BLM's Hydraulic Considerations for Pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface. Please see site specific PODs and/or mapping materials for location of related facilities such as cathodic protection wells or pumping stations. Pipeline signs will be installed along the route to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves, lateral T's, and/or cathodic protection wells will be installed at various locations for production integrity and safety purposes.

Upon completion of the proposed buried pipeline, the entire area of disturbance will be reclaimed to the standards proposed in the Green River District Reclamation Guidelines. Please refer to section J for more details regarding final reclamation.

When no longer deemed necessary by the operator, Kerr-McGee or it's successor will consult with the BLM, Vernal Field Office before terminating of the use of the pipeline(s).

Deep well ground bed and Cathodic Protection equipment will be installed within the pipeline route to protect the integrity of the pipeline(s). A buried power line approximately 120 Volts +/- will be constructed from the existing overhead power line to a rectifier. The rectifier, which is approximately 3' X 4' +/-, will convert the AC power to DC power; it is then connected to the buried pipeline(s) to protect it from corrosion. Please see attached plat for location of Cathodic Protection.

## The Anadarko Completions Transportation System (ACTS) information:

Please refer to Exhibit C for ACTs Lines

Upon completion of the wells on this pad, Kerr-McGee is also requesting to utilize the pit on this the proposed location as an Anadarko Completion Transport System (ACTS) staging pit which will be utilized for other completion operations in the area. The ACTS process will reduce the amount of truck traffic on a field-wide basis, also reducing vehicle emissions and fugitive dust generation.

Kerr-McGee will use ACTS to optimize the completion processes for multiple pads across the project area which may include up to a section of development. ACTS will facilitate management of frac fluids by utilizing existing reserve pits and temporary, surface-laid aluminum pipe liquids transfer lines between frac locations. The pit will be refurbished as follows: mix and pile up drill cuttings with dry dirt, bury the original liner in the pit, walk bottom of pit with cat. Kerr-McGee will

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reline the pit with a 30 mil liner and double felt padding. The refurbished pit will be the same size or smaller as specified in the originally approved ROW/APD. The pit refurb will be done in a normal procedure and there will be no modification to the pit. Hog fence panels (5'  $\times$  16') will be built and painted shadow gray and will be put up on the work side of the pit. Polypropylene netting will be installed over all pits.

The collected hydrocarbons will be treated and sold at approved sales facilities. A loading rack with drip containment will also be installed where water trucks can unload and load to prevent damage caused from pulling hoses in and out of the pit.

ACTS will require temporarily laying multiple 6" aluminum pipe water transfer lines on the surface between either existing or refurbished reserve pits. Please see the attached ACTS exhibit C for placement of the proposed temporary lines. The temporary aluminum transfer lines will be utilized to transport frac fluid being injected and/or recovered during the completion process and will be laid adjacent to existing access roads or pipeline corridors. Upon completion of the frac operation, the liquids transfer lines will be flushed with fresh water and purged with compressed air. The contents of the transfer lines will be flushed into a water truck for delivery to another ACTS location or a reserve pit.

The volume of frac fluid transported through a water transfer line will vary, but volume is projected to be approximately 1.75 bbls per 50-foot joint. Although the maximum working pressure is 125 psig, the liquids transfer lines will be operated at a pressure of approximately 30 to 40 psig. Kerr-McGee requests to keep the netted pit open for one year from first production. During this time the surrounding well location completion fluids may be recycled in this pit and utilized for other frac jobs in the area. After one year Kerr-McGee will backfill the pit and reclaim. Kerr-McGee understands that due to the temporary nature of this system BLM considers this a casual use situation; therefore, no permanent ROW or temporary use plan will need to be issued by the BLM.

#### E. Location and Types of Water Supply:

Water for drilling and completion operations will be obtained from the following sources:

Permit # 49-2307	JD Field Services	Green River- Section 15, T2N, R22E
Permit # 49-2321	R.N. Industries	White River- Section 2, T10S, R24E
Permit # 49-2319	R.N. Industries	White River- Various Sources
Permit # 49-2320	R.N. Industries	Green River- Section 33, T8S, R23E

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

#### F. Construction Materials:

Construction operations will typically be completed with native materials found on location. Construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source (described in site-specific documents). No construction materials will be removed from federal lands without prior approval from the BLM. A source location other than an on-location construction site will be designated either via a map or narrative within the project specific materials provided to the BLM.

#### G. Methods for Handling Waste:

All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. Kerr-McGee also maintains a Spill Control and Countermeasure Plan, which includes notification requirements, including the BLM, for all reportable spills of oil, produced liquids, and hazardous materials.

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Any accidental release, such as a leak or spill in excess of the reportable quantity, as established by 40 CFR Part 117.3, will be reported as per the requirements of CERCLA, Section 102 B. If a release involves petroleum hydrocarbons or produced liquids, Kerr-McGee will comply with the notification requirements of NTL-3A. Drill cuttings and/or drilling fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless specifically approved by the BLM, no oil or other oil-based drilling additives, chromium/metals-based or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface precipitation runoff into the pit (via appropriate placement of subsoil/topsoil storage areas and/or construction of berms, ditches, etc). Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling, completions or well testing, liquid petroleum hydrocarbons will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by the BLM. Should timely removal not be feasible, the pit will be netted as soon as practical. Similarly, hydrocarbon removal will take place prior to the closure of the pit, unless authorization is provided for disposal via alternate pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with an impermeable liner. The liner will be a synthetic material 30 mil or thicker. The bottom and side walls of the pit will be void of any sharp rocks that could puncture the liner. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. After evaporation and when dry, the reserve pit liners will be cut off, ripped and/or folded back (as safety considerations allow) as near to the mud surface as possible and buried on location or hauled to a landfill prior to backfilling the pit with a minimum of five feet of soil material.

Where necessary and if conditions (freeboard, etc.) allow, produced liquids from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per Onshore Order Number 7 (OSO 7). Subsequently, permanent approved produced water disposal methods will be employed in accordance with OSO 7 and/or as described in a Water Management Plan (WMP). Otherwise, fluids disposal locations and associated haul routes, for ROW consideration, are typically depicted on Topo A of individual projects. Revisions to the water source or method of transportation will be subject to written approval from the BLM.

Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility. Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash receptacles will be collected and removed from the well location.

For the protection of livestock and wildlife, all open pits (excluding flare pits) will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42"and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16'. Siphons, catchments, and absorbent pads will be installed to keep hydrocarbons produced by the drilling rig or other equipment on location from entering the reserve pit. Hydrocarbons, contaminated pads, and/or soils will be disposed of in accordance with state and federal requirements.

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Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

#### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Hazardous materials may be contained in some grease or lubricants, solvents, acids, paint, and herbicides, among others as defined above. Kerr-McGee maintains a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used during the course of construction, drilling, completion, and production operations for this project. The transport, use, storage and handling of hazardous materials will follow procedures specified by federal and state regulations. Transportation of hazardous materials to the well location is regulated by the Department of Transportation (DOT) under 49 CFR, Parts 171-180. DOT regulations pertain to the packing, container handling, labeling, vehicle placarding, and other safety aspects.

Potentially hazardous materials used in the development or operation of wells will be kept in limited quantities on well sites and at the production facilities for short periods of time. Chemicals meeting the criteria for being an acutely hazardous material/substance, or meet the quantities criteria per BLM Instruction Memorandum No. 93-344, will not be used.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

Fluids disposal and pipeline/haul routes are depicted on Topo Map A.

Any produced water separated from recoverable condensate from the proposed well will be contained in a water tank and will then be transported by pipeline and/or truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E NBU #159 in Sec. 35 T9S R21E Ace Oilfield in Sec. 2 T6S R20E MC&MC in Sec. 12 T6S R19E Pipeline Facility in Sec. 36 T9S R20E

Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E

Bonanza Evaporation Pond in Sec. 2 T10S R23E

Or to one of the following Kerr-McGee active Salt Water Disposal (SWD) wells:

NBU 159 SWD in Sec. 35 T9S R21E CIGE 112D SWD in Sec. 19 T9S R21E CIGE 114 SWD in Sec. 34 T9S R21E NBU 921-34K SWD in Sec. 34 T9S R21E NBU 921-33F SWD in Sec. 34 T9S R21E

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#### H. Ancillary Facilities:

No additional ancillary facilities are planned for this location.

#### I. Well Site Layout:

The location, orientation and aerial extent of each drill pad, reserve/completion/flare pit, access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

For the protection of livestock and wildlife, all open pits and cellars will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Each well will utilize either a centralized tank battery, centralized fluids management system, or have tanks installed on its pad. Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of BLM.

Where produced liquids tanks are utilized, the tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids. The tanks will be fenced or capped to prevent livestock or wildlife entry. The tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons. The tanks are not to be used for disposal of liquids from additional sources without the prior approval of the BLM.

#### J. Plans for Surface Reclamation:

The surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. Interim reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

#### **Interim Reclamation**

Interim reclamation may include pit evaporation, fluid removal, pit solidification, re-contouring, ripping, spreading top soil, seeding, and/or weed control. Interim reclamation will be performed in accordance with OSO 1, or written notification will be provided to the BLM for approval. Where feasible, drilling locations, reserve pits, or access routes not utilized for production operations will be re-contoured to a natural appearance.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

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A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit. Disposal of pit fluids and linings is discussed in Section G.

#### **Final Reclamation**

Final reclamation will be performed for unproductive wells and after the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by Kerr-McGee. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. The BLM will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring the site to the approximate contour that existed prior to pad construction, final grading will be conducted over the entire surface of the well site and access road. The area will be ripped to a depth of 18 to 24" on 18 to 24" centers, where practical. The surface soil material will be pitted with small depressions to form longitudinal depressions 12 to 18"deep, where practical. The entire area will be uniformly covered with the depressions constructed perpendicular to the natural flow of water.

Reclamation of roads will be performed at the discretion of the BLM. All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded in accordance with the seeding specifications of the BLM.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to the BLM.

#### **Measures Common to Interim and Final Reclamation**

Soil preparation will be conducted using a disk for areas in need of more soil preparation following site preparation. This will provide primary soil tillage to a depth no greater than 6 inches. Prior to reseeding, compacted areas will be scarified by ripping or chiseling to loosen compacted soils, promote water infiltration, and improve soil aeration and root penetration.

Seeding will occur year-round as conditions allow and will typically be accomplished through the use of a no-till rangeland style seed drill with a "picker box" in order to seed "fluffy" seed. Where drill seeding is not the preferred method, seed will be broadcast and then raked into the ground at double the rate of drill seeding. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The seed mixes will be selected from a list provided by or approved by the BLM, or a specific seed mix will be proposed by Kerr-McGee to the BLM and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be maintained by Kerr-McGee. Every effort will be made to obtain "cheat grass free seed".

Seed Mix to be used for Well Site, Access Road, and Pipeline (as applicable):

Shadescale Mix	e Live Seed lbs/acre
Indian Ricegrass (Nezpar)	3
Sandberg bluegrass	0.75
Bottlebrush squirreltail	1
Great Basin Wildrye	0.5

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Crested wheatgrass (Ephraim)	1.5
Winterfat	0.25
Shadscale	1.5
Four-wing saltbush	0.75
Forage Kochia	0.25
Total	9.5

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage. Soil amendments such as "Sustain" (an organic fertilizer that will be applied at the rate 1,800 – 2,100 lbs/acre with seed) may also be dry broadcast or applied with hydro-seeding equipment.

#### **Weed Control**

All weed management will be done in accordance with the Vernal BLM Surface Disturbance Weed Policy. Noxious weeds will be controlled, as applicable, on project areas. Monitoring and management of noxious and/or invasive weeds of concern will be completed annually until the project is deemed successfully reclaimed by the surface management agency and/or owner according to the Anadarko Integrated Weed Management Plan. Noxious weed infestations will be mapped using a GPS unit and submitted to the BLM with information required in the Vernal BLM Surface Disturbance Weed Policy. If herbicide is to be applied it will be done according to an approved Pesticide Use Permit (PUP), inclusive of applicable locations. All pesticide applications will be recorded using a Pesticide Application Record (PAR) and will be submitted along with a Pesticide Use Report (PUR) annually prior to Dec. 31.

#### Monitoring

Monitoring of reclaimed project areas will be completed annually during the growing season and actions to ensure reclamation success will be taken as needed. During the first two growing seasons an ocular methodology will be used to determine the success of the reclamation activities. During the 3rd growing season a 200 point line intercept (quantitative) methodology will be used to obtain basal cover. The goal is to have the reclaimed area reach 30% basal cover when compared to the reference site. If after three growing seasons the area has not reached 30% basal cover, additional reclamation activities may be necessary. Monitoring will continue until the reclaimed area reaches 75% basal cover of desirable vegetation when compared to the reference site. (Green River District Reclamation Guidelines)

All monitoring reports will be submitted electronically to the Vernal BLM in the form of a geo-database no later than March 31, of the calendar year following the data collection.

#### K. Surface/Mineral Ownership:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 (435)781-4400

#### L. Other Information:

#### **Onsite Specifics:**

- A 404 Stream Alteration Permit will be obtained to cross the Sand Wash in the SE/4 of the section See Exhibit A or B.
- Facilities: Will be painted Shadow Grey
- Existing surface gas gathering pipeline will be removed from location if no longer in service

NBU 922-30E4BS / 922-30E4CS / 922-30K4BS / 922-30L1BS / 922-30L1CS / 922-30L4BS Kerr-McGee OII Gas Onshore, L.P.

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#### Cultural and Paleontological Resources

All personnel are strictly prohibited from collecting artifacts, any paleontological specimens or fossils, and from disturbing any significant cultural resources in the area. If artifacts, fossils, or any culturally sensitive materials are exposed or identified in the area of construction, all construction operations that would affect the newly discovered resource will cease, and Kerr-McGee will provide immediate notification to the BLM.

#### Resource Reports:

A Class I literature survey was completed on February 11, 2011, by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 10-243b.

A paleontological reconnaissance survey was completed on December 31, 2010, by Intermountain Paleo-Consulting. For additional details please refer to report IPC #10-33.

Biological field survey was completed on January 27, 2011, by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-405.

Biological field survey was completed for the Southeast Trunk Liquid Line on June 2, 2011, by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-457.

#### M. Lessee's or Operators' Representative & Certification:

Laura Abrams Regulatory Analyst II Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6356 Tommy Thompson General Manager, Drilling Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

9	awa Louis	June 2, 2011
Laura Abrams		Date



Kerr-McGee Oil & Gas Onshore LP PO Box 173779 DENVER, CO 80217-3779

April 4, 2011

Ms. Diana Mason Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11

NBU 922-30L4BS

T9S-R22E

Section 30 NWSW (Surf), NWSW (Bottom)

Surface: 2096' FSL, 800' FWL Bottom Hole: 1705' FSL, 758' FWL

Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling.

- Kerr-McGee's NBU 922-30L4BS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing roads and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Joe Matney Sr. Staff Landman

Joe Matines

# **United States Department of the Interior**

#### BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

June 27, 2011

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2011 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2011 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

### **NBU 922-30M PAD**

BHL Sec 30 T09S R22E 1380 FSL 0758 FWL 43-047-51692 NBU 922-30M1BS Sec 30 T09S R22E 0566 FSL 0215 FWL BHL Sec 30 T09S R22E 1055 FSL 0758 FWL 43-047-51693 NBU 922-30M1CS Sec 30 T09S R22E 0556 FSL 0213 FWL BHL Sec 30 T09S R22E 0730 FSL 0757 FWL 43-047-51694 NBU 922-30M4BS Sec 30 T09S R22E 0536 FSL 0210 FWL BHL Sec 30 T09S R22E 0405 FSL 0757 FWL 43-047-51695 NBU 922-30N4CS Sec 30 T09S R22E 0546 FSL 0212 FWL BHL Sec 30 T09S R22E 0252 FSL 1974 FWL **NBU 922-30G PAD** 43-047-51696 NBU 922-30G3DS Sec 30 T09S R22E 2550 FNL 2411 FEL BHL Sec 30 T09S R22E 2517 FNL 1846 FEL 43-047-51697 NBU 922-30G4BS Sec 30 T09S R22E 2544 FNL 2403 FEL BHL Sec 30 T09S R22E 2199 FNL 1677 FEL 43-047-51698 NBU 922-30I2AS Sec 30 T09S R22E 2557 FNL 2419 FEL BHL Sec 30 T09S R22E 2527 FSL 0856 FEL 43-047-51699 NBU 922-30J1BS Sec 30 T09S R22E 2563 FNL 2426 FEL BHL Sec 30 T09S R22E 2360 FSL 1675 FEL API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

(Proposed PZ	WASA	ATCH-MESA VERD	E)							
NBU 922-30G PAI		922-30G1CS	Sec.	30	ምበ <b>ଉ</b> ፍ	D22F	2538	FNI	2395	FFI
15 017 51700	NDO	BHL								
43-047-51701	NBU	922-30J4BS								
NBU 922-30H PAI	)	BHL	Sec	30	T09S	R22E	1709	FSL	1674	FEL
		922-30G1BS BHL								
43-047-51703	NBU	922-30H2AS BHL								
43-047-51704	MRII	922-30H3AS	SAC	3.0	<b>ም</b> በዓፍ	R22F	1571	FNT.	1232	. דקק
13 017 31701	NDO	BHL								
43-047-51705	NBU	922-30H3DS								
NBU 922-30L PAI	1	BHL	Sec	30	T09S	R22E	2369	FNL	0723	FEL
		922-30E4BS								
		BHL	Sec	30	T09S	R22E	2194	F'NL	0760	F'WL
43-047-51707	NBU	922-30E4CS BHL								
42 047 51700	NE									
43-04/-51/08	NBO	922-30K4BS BHL								
43-047-51709	NBU	922-30L1BS	Sec	30	T09S	R22E	2090	FSL	0792	FWL
		BHL	Sec	30	T09S	R22E	2355	FSL	0759	FWL
43-047-51710	NBU	922-30L4BS								
922-30N PAD		BHL	Sec	30	T09S	RZZE	1/05	FSL	0758	F.M.T
43-047-51711	NBU	922-30N1BS BHL								
43-047-51712	NBU	922-30J4CS BHL							1754 1673	
43-047-51713	NBU	922-30K4CS	Sec	30	T09S	R22E	0539	FSL	1724	FWL
1 11 01/10									1977	
43-047-51714	NBU	922-30N4BS	Sec	30	T09S	R22E	0544	FSL	1744	FWL
		BHL	Sec	30	T09S	R22E	0571	FSL	1974	FWL

43-047-51715 NBU 922-3001BS Sec 30 T09S R22E 0550 FSL 1763 FWL

BHL Sec 30 T09S R22E 1058 FSL 1672 FEL

Page 3

API # WELL NAME

LOCATION

(Proposed PZ WASATCH-MESA VERDE)

#### 922-30N PAD

BHL Sec 30 T09S R22E 0732 FSL 1671 FEL

This office has no objection to permitting the wells at this time.

Michael L. Coulthard

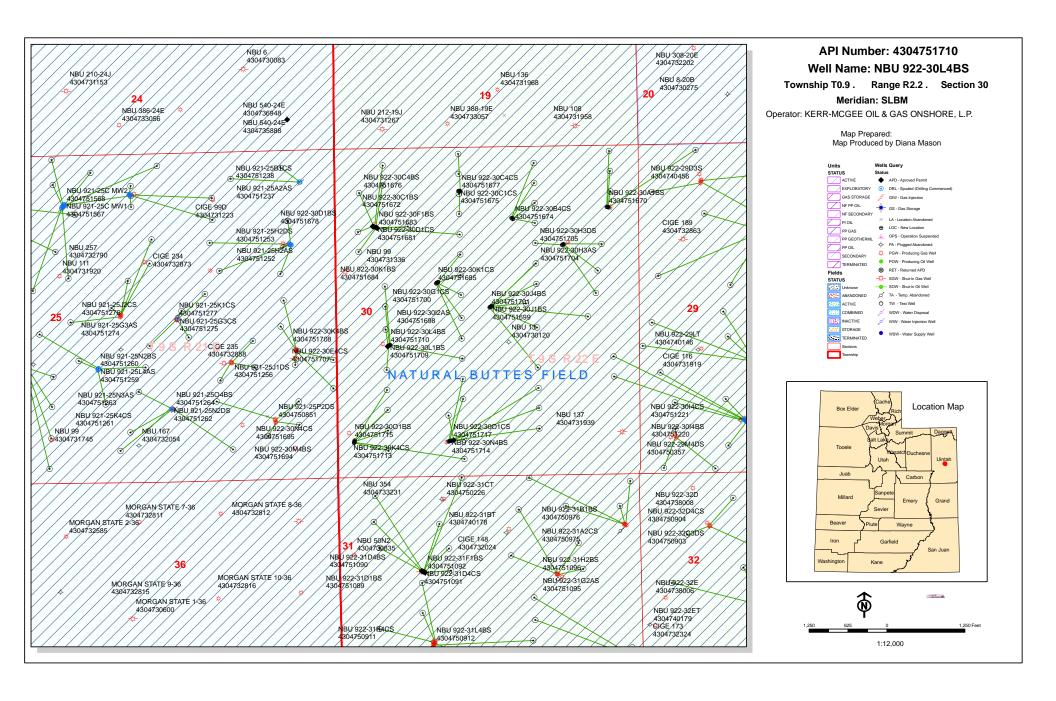
DN: cn=Michael L. Coulthard, o=Bureau of Land Management,
ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US Date: 2011.06.27 08:54:22 -06'00'

bcc: File - Natural Buttes Unit Division of Oil Gas and Mining

Central Files Agr. Sec. Chron

Fluid Chron

MCoulthard:mc:6-27-11



# WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 6/21/2011 **API NO. ASSIGNED:** 43047517100000

WELL NAME: NBU 922-30L4BS

**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) PHONE NUMBER: 720 929-6356

**CONTACT:** Laura Abrams

PROPOSED LOCATION: NWSW 30 090S 220E **Permit Tech Review:** 

> **SURFACE: 2096 FSL 0800 FWL Engineering Review:**

> **BOTTOM:** 1705 FSL 0758 FWL Geology Review:

**COUNTY: UINTAH** 

**LATITUDE:** 40.00563 **LONGITUDE:** -109.48705

UTM SURF EASTINGS: 629141.00 NORTHINGS: 4429268.00

FIELD NAME: NATURAL BUTTES LEASE TYPE: 1 - Federal

**LEASE NUMBER: UTU463** PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

SURFACE OWNER: 1 - Federal **COALBED METHANE: NO** 

**RECEIVED AND/OR REVIEWED: LOCATION AND SITING:** 

 PLAT R649-2-3.

Unit: NATURAL BUTTES Bond: FEDERAL - WYB000291

**Potash** R649-3-2. General

✓ Oil Shale 190-5

Oil Shale 190-3 R649-3-3. Exception

**Drilling Unit** Oil Shale 190-13

Board Cause No: Cause 173-14 Water Permit: 43-8496

**Effective Date:** 12/2/1999 **RDCC Review:** 

Siting: Suspends General Siting **Fee Surface Agreement** 

✓ Intent to Commingle ✓ R649-3-11. Directional Drill

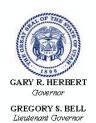
**Commingling Approved** 

**Comments:** Presite Completed

Stipulations: 1 - Exception Location - dmason

3 - Commingling - ddoucet 4 - Federal Approval - dmason 15 - Directional - dmason 17 - Oil Shale 190-5(b) - dmason

API Well No: 43047517100000



# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

# **Permit To Drill**

\*\*\*\*\*\*

Well Name: NBU 922-30L4BS **API Well Number:** 43047517100000

Lease Number: UTU463 Surface Owner: FEDERAL Approval Date: 8/23/2011

#### **Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

#### **Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

#### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

#### **Exception Location:**

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

## **Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

#### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

# **Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale

API Well No: 43047517100000

Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

## **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

• Within 24 hours following the spudding of the well – contact Carol Daniels at 801-538-5284 (please leave a voicemail message if not available)

OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at http://oilgas.ogm.utah.gov

# **Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) due prior to implementation
- Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
- Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

**Approved By:** 

For John Rogers Associate Director, Oil & Gas Form 3160-3 (August 2007)

# RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR JUL 0 1 2011
BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010

BUREAU OF LAND		UTU463	4.1.					
APPLICATION FOR PERMIT	TO BLIVE, RVOYFIal Utah	6. If Indian, Allottee or Tril	oe Name					
1a. Type of Work: ☑ DRILL ☐ REENTER		7. If Unit or CA Agreemen UTU63047A	t, Name and No.					
	and the first of the control of the The control of the control of							
1b. Type of Well: Oil Well Gas Well Ot	The state of the s	NBU 922-30L4BS						
2. Name of Operator Contact: KERR-MCGEE OIL&GAS ONSHORE(All)PLaura.A	LAURA ABRAMS Abrams@anadarko.com	9. API Well No. 1-51	710					
3a. Address PO BOX 173779 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6356 Fx: 720-929-7356	10. Field and Pool, or Explo NATURAL BUTTES	oratory					
4. Location of Well (Report location clearly and in accorded	ance with any State requirements.*)	11. Sec., T., R., M., or Blk.	and Survey or Area					
At surface NWSW Lot 3 2096FSL 800	0FWL 40.005493 N Lat, 109.487801 W Lon	Sec 30 T9S R22E M	ler SLB					
At proposed prod. zone NWSW Lot 3 1705FSL 75	BFWL 40.004420 N Lat, 109.487949 W Lon							
14. Distance in miles and direction from nearest town or post APPROXIMATELY 42.3 MILES SOUTH OF VE		12. County or Parish UINTAH COUNTY	13. State UT					
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig, unit line, if any)	16. No. of Acres in Lease	17. Spacing Unit dedicated	to this well					
758	551.00							
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on	file					
415	9558 MD 9528 TVD	WYB000291						
21. Elevations (Show whether DF, KB, RT, GL, etc. 4972 GL	22. Approximate date work will start 12/01/2011	23. Estimated duration 60-90 DAYS						
	24. Attachments							
The following, completed in accordance with the requirements o	f Onshore Oil and Gas Order No. 1, shall be attached to	his form:						
Well plat certified by a registered surveyor.     A Drilling Plan.     A Surface Use Plan (if the location is on National Forest Syst SUPO shall be filed with the appropriate Forest Service Off	Item 20 above). 5. Operator certification	ons unless covered by an existing formation and/or plans as may be						
25. Signature (Electronic Submission)	Name (Printed/Typed) LAURA ABRAMS Ph: 720-929-6356		Date 06/21/2011					
Title REGULATORY ANALYST II								
Approved by (Signature)	Name (Printed/Typed) Jerry Kenczka		Date JAN 0 9 20					
Title Assistant Field Manager Lands & Mineral Resources	Office VERNAL FIELD OFFICE							
Application approval does not warrant or certify the applicant ho operations thereon.  Conditions of approval, if any, are attached.	lds legal or equitable title to those rights in the subject le CONDITIONS OF APPRO		licant to conduct					
normania na mbhya i mi sa minda mya minamani	A A 11 A 11 A 11 A 1 A 1 A 1 A 1 A 1 A	THE INTROPPED	•					

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

For KERR-MCGEE OILS CAS ONSHORE LP, sent to the Vernal

JAN 1 3 2012

UDOGN

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

**NOTICE OF APPROVAL** 

18XS0492A2

NOS-03/25/2011



# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT VERNAL FIELD OFFICE

VERNAL, UT 84078

(435) 781-4400



# CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Well No: API No: Kerr-McGee Oil & Gas Onshore, LP

170 South 500 East

NBU 922-30L4BS

43-047-51710

Location:

LOT 3, Sec. 30, T9S, R22E

Lease No: UTU-463

Agreement:

**Natural Buttes Unit** 

**OFFICE NUMBER:** 

(435) 781-4400

**OFFICE FAX NUMBER:** 

(435) 781-3420

# A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

#### **NOTIFICATION REQUIREMENTS**

Location Construction (Notify Environmental Scientist)	-	Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify Environmental Scientist)	-	Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	-	Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to running casing and cementing all casing strings to: blm_ut_vn_opreport@blm.gov.
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	-	Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

Page 2 of 7 Well: NBU 922-30L4BS 12/21/2011

# SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

- All new and replacement internal combustion gas field engines of less than or equal to 300 designrated horsepower must not emit more than 2 gms of NO<sub>x</sub> per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO<sub>x</sub> per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop
  work and contact the Authorized Officer (AO). A determination will be made by the AO as to what
  mitigation may be necessary for the discovered paleontologic material before construction can
  continue.
- Kerr McGee will adhere to all applicant committed conservation measures and conservation recommendations that are stated in the USFWS's "Final Biological Opinion for the Anadarko Petroleum Corporation Natural Buttes Unit and Bonanza Area Natural Gas Development Project.
- The operator will follow the Green River District Reclamation Guidelines for Reclamation.

#### Mitigation for Invasive Weeds

- All vehicles and equipment will be cleaned either through power-washing, or other approved method, if the vehicles or equipment were previously operated outside the Uinta Basin, to prevent weed seed introduction.
- All disturbance areas will be monitored for noxious weeds annually, for a minimum of three growing seasons following completion of project or until desirable vegetation is established
- Noxious and invasive weeds will be controlled throughout the area of project disturbance.
- Noxious weeds will be inventoried and reported to BLM in the annual reclamation report. Where an
  integrated pest management program is applicable, coordination has been undertaken with the
  state and local management program (if existing). A copy of the pest management plan will be
  submitted for each project.
- A pesticide use permit (PUP) will be obtained for the project, if applicable.

# Mitigation for Paleontology

 A permitted paleontologist is to be present for monitor purposes during all surface disturbing actives: examples include the following building of the well pad, access road, and pipelines

# Mitigation Measures for Colorado River Fish Species:

The best method to avoid entrapment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a BLM and Service approved location is best.

Page 3 of 7 Well: NBU 922-30L4BS 1/10/2012

- If the pump head is located in the river channel where larval fish are known to occur, the following measures apply:
  - a. do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes;
  - b. limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (see above); and
  - c. limit the amount of pumping, to the greatest extent possible, during the pre-dawn hours as larval drift studies indicate that this is a period of greatest daily activity.
- Screen all pump intakes with 3/32" mesh material.
- Report any fish impinged on the intake screen to the Service (801.975.3330) and the Utah Division of Wildlife Resources:

Northeastern Region 152 East 100 North, Vernal, UT 84078 Phone: (435) 781-9453

#### Mitigation for Migratory birds.

- Construction and drilling is not allowed from January 1 August 31 to minimize impacts during Golden Eagle and Red-tailed hawk nesting
- If it is anticipated that construction or drilling will occur during the given timing restriction, a BLM or qualified biologist shall be notified so surveys can be conducted. Depending upon the results of the surveys, permission to proceed may or may not be granted by the BLM Authorized Officer.

Page 4 of 7 Well: NBU 922-30L4BS 12/21/2011

# DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

#### SITE SPECIFIC DOWNHOLE COAs:

- Gamma ray Log shall be run from Total Depth to Surface.
- CBL will be run from TD to TOC.

## Variances Granted: Air Drilling

- Properly lubricated and maintained rotating head. Variance granted to use a properly maintained and lubricated diverter bowl in place of a rotating head.
- Blooie line discharge 100' from the well bore. Variance granted for blooie line discharge to be 45' from the well bore.
- Compressors located in the opposite direction from the blooie line a minimum of 100' from the well bore. Variance granted for truck/trailer mounted air compressors located 40'from the well bore.
- In lieu of mud products on location, Kerr McGee will fill the reserve pit with water for the kill medium and will utilize a skid pump near the reserve pit to supply the water to the well bore if necessary.
- Automatic igniter. Variance granted for igniter due to there being no productive formations encountered while air drilling.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

# DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times.
   Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily
  drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order
  No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a
  test pump with a chart recorder and <u>NOT</u> by the rig pumps. Test shall be reported in the driller's
  log.

Page 5 of 7 Well: NBU 922-30L4BS 12/21/2011

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is
  encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal
  Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM,
   Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well in LAS format to BLM\_UT\_VN\_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

Page 6 of 7 Well: NBU 922-30L4BS 12/21/2011

#### **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at <a href="https://www.ONRR.gov">www.ONRR.gov</a>.
- Should the well be successfully completed for production, the BLM Vernal Field office must be
  notified when it is placed in a producing status. Such notification will be by written communication
  and must be received in this office by not later than the fifth business day following the date on
  which the well is placed on production. The notification shall provide, as a minimum, the following
  informational items:
  - Operator name, address, and telephone number.
  - Well name and number.
  - Well location (1/41/4, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - o The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - o Unit agreement and/or participating area name and number, if applicable.
  - O Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be
  reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported
  verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will
  be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of
  Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs,

Page 7 of 7 Well: NBU 922-30L4BS 12/21/2011

core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office
  Petroleum Engineers will be provided with a date and time for the initial meter calibration and all
  future meter proving schedules. A copy of the meter calibration reports shall be submitted to the
  BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid
  hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall
  be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
  equipment shall be removed from a well to be placed in a suspended status without prior approval
  of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior
  approval of the BLM Vernal Field Office shall be obtained and notification given before resumption
  of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

SUBMIT AS EMAIL

Print Form

# BLM - Vernal Field Office - Notification Form

Ope	rator <u>KERR-McGEE OIL &amp; GA</u>	<u>NS</u> Rig Name	e/# <u>BUC</u>	KET RIG				
Subr	Submitted By J. Scharnowske Phone Number 720.929.6304							
	Name/Number NBU 922-30L							
	Qtr <u>NWSW</u> Section 30		es F	Range 22E				
	e Serial Number UTU463	• -	- ; •	<u> </u>				
	Number <u>4304751710</u>							
Spuc	<u> 1 Notice</u> – Spud is the initial	spudding c	of the we	ell, not drilling				
	pelow a casing string.							
	Date/Time <u>05/03/2012</u>	<u>17:00 HRS</u>	AM 🔙	PM				
<b>C</b>	- DI							
	ng – Please report time cas	ing run star	ts, not c	ementing				
time	_							
$\checkmark$	Surface Casing							
H	Intermediate Casing							
	Production Casing							
	Liner							
Ш	Other							
	Date/Time 05/27/2012	08:00 HRS	ам 🗀	PM				
				· •				
<b>BOP</b>	<u>E</u>			RECEIVED				
	Initial BOPE test at surface	casing poir	nt	MAY 02 2012				
	BOPE test at intermediate	casing point	t					
	30 day BOPE test			DIV. OF OIL. GAS & MINING				
	Other							
	Date/Time		AM 🗌	PM 🗌				
Rem	arks ESTIMATED DATE AND TIME. PLEA	ASE CONTACT KENN	Y GATHINGS	AT				
435.82	8.0986 OR LOVEL YOUNG AT 435.781.709	51						

	FORM 9				
I	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463		
SUNDR	Y NOTICES AND REPORTS	ON WEI	LS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES				
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 922-30L4BS				
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.			9. API NUMBER: 43047517100000	
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 8021	<b>PHONE NU</b>		9. FIELD and POOL or WILDCAT:	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL				COUNTY: UINTAH	
QTR/QTR, SECTION, TOWNSH	tip, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Me	eridian: S		STATE: UTAH	
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NATUR	E OF NOTICE, REPOR	RT, OR OTHER DATA	
TYPE OF SUBMISSION		Т	YPE OF ACTION		
	ACIDIZE	ALTER CA	ASING	CASING REPAIR	
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE	TUBING	CHANGE WELL NAME	
	CHANGE WELL STATUS	Сомміно	GLE PRODUCING FORMATIONS	CONVERT WELL TYPE	
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTUR	E TREAT	☐ NEW CONSTRUCTION	
Date of Work Completion.	OPERATOR CHANGE	PLUG AN	D ABANDON	PLUG BACK	
✓ SPUD REPORT	PRODUCTION START OR RESUME	RECLAMA	ATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION	
Date of Spud:	REPERFORATE CURRENT FORMATION		CK TO REPAIR WELL	TEMPORARY ABANDON	
5/3/2012	TUBING REPAIR	U VENT OR		WATER DISPOSAL	
DRILLING REPORT Report Date:	WATER SHUTOFF		TUS EXTENSION	APD EXTENSION	
Report Date:			TIUS EXTENSION		
	WILDCAT WELL DETERMINATION	OTHER		OTHER:	
MIRU TRIPLE A BU RAN 14" 36.7# SC	COMPLETED OPERATIONS. Clearly show CKET RIG. DRILLED 20" CON HEDULE 10 CONDUCTOR P (. SPUD WELL LOCATION O HRS.	NDUCTO PIPE. CEN	R HOLE TO 40'. MENT WITH 28	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY May 16, 2012	
NAME (DI EASE DDINIT)	DUONE NUM	MRED TITI	<b>-</b>		
NAME (PLEASE PRINT) Jaime Scharnowske	<b>PHONE NUM</b> 720 929-6304		<b>E</b> ulartory Analyst		
SIGNATURE N/A		<b>DAT</b> 5/1	E 4/2012		

Sundry Number: 25744 API Well Number: 43047517100000 FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCE		FORM 9
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463		
SUNDR	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:		
Do not use this form for procurrent bottom-hole depth, FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	NSHORE, L.P.		<b>9. API NUMBER:</b> 43047517100000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18tl	h Street, Suite 600, Denver, CO, 80217	PHONE NUMBER: 3779 720 929-6	9. FIELD and POOL or WILDCAT: 5MATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE:			COUNTY: UINTAH
2096 FSL 0800 FWL QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	<b>HIP, RANGE, MERIDIAN:</b> 30 Township: 09.0S Range: 22.0E Merid	ian: S	STATE: UTAH
11. CHEC	K APPROPRIATE BOXES TO INDICATE	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
✓ NOTICE OF INTENT	ACIDIZE	ALTER CASING	CASING REPAIR
Approximate date work will start: 5/15/2012	CHANGE TO PREVIOUS PLANS  CHANGE WELL STATUS	CHANGE TUBING  COMMINGLE PRODUCING FORMATIONS	CHANGE WELL NAME CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	✓ DEEPEN [	FRACTURE TREAT	NEW CONSTRUCTION
_	OPERATOR CHANGE  PRODUCTION START OR RESUME	PLUG AND ABANDON  RECLAMATION OF WELL SITE	☐ PLUG BACK ☐ RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:		SI TA STATUS EXTENSION  OTHER	OTHER:
The operator reque the well will remain (Mesaverde). The closed loop drilling	completed operations. Clearly show all ests approval to deepen the venthin the same formation as Operator also requests appropriately and a production castiously approved drilling plants see the attachment. Thank y	well, the total depth of as currently permitted oval for a FIT wavier, sing change. All other will not change. Please	Approved by the Utah Division of Oil, Gas and Mining  Date: May 21, 2012  By:
NAME (PLEASE PRINT) Jaime Scharnowske	PHONE NUMBE 720 929-6304	R TITLE Regulartory Analyst	
SIGNATURE N/A	720 028-0004	DATE 5/15/2012	

NBU 922-30L4BS Drilling Program
1 of 7

# Kerr-McGee Oil & Gas Onshore. L.P.

#### NBU 922-30L4BS

 Surface:
 2096 FSL / 800 FWL
 NWSW

 BHL:
 1705 FSL / 758 FWL
 NWSW

Section 30 T9S R22E

Unitah County, Utah Mineral Lease: UTU 0463

#### ONSHORE ORDER NO. 1

#### **DRILLING PROGRAM**

# Estimated Tops of Important Geologic Markers: Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,401'	
Birds Nest	1,716'	Water
Mahogany	2,179'	Water
Wasatch	4,648'	Gas
Mesaverde	7,278'	Gas
Sego	9,499'	Gas
Castlegate	9,569'	Gas
Blackhawk	10,009'	Gas
TVD	10,609'	
TD	10,639'	

#### 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program

# 4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

#### 5. <u>Drilling Fluids Program</u>:

Please refer to the attached Drilling Program

#### 6. <u>Evaluation Program:</u>

Please refer to the attached Drilling Program

NBU 922-30L4BS Drilling Program
2 of 7

#### 7. <u>Abnormal Conditions</u>:

Maximum anticipated bottom hole pressure calculated at 10609' TVD, approximately equals 7,002 psi (0.66 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 4,716 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

#### 8. <u>Anticipated Starting Dates:</u>

Drilling is planned to commence immediately upon approval of this application.

#### 9. <u>Variances:</u>

Please refer to the attached Drilling Program. Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- · Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- · Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may

be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

NBU 922-30L4BS Drilling Program
3 of 7

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill a 11inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

#### Variance for Special Drilling Operation (surface equipment placement) Requirements

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

NBU 922-30L4BS Drilling Program
4 of 7

#### Variance for FIT Requirements

KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

#### Conclusion

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

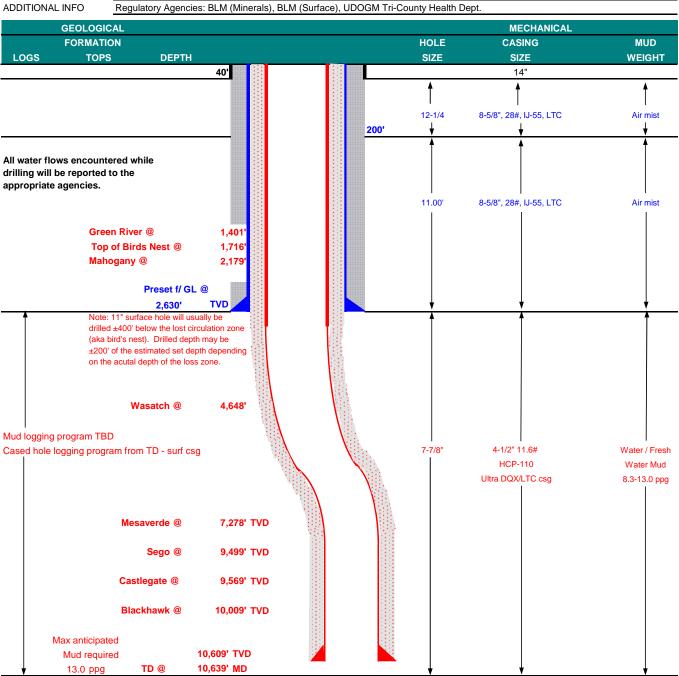
### 10. Other Information:

Please refer to the attached Drilling Program.



# KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

			DITILL	1101110				
COMPANY NAME KER	R-McGEE O	IL & GAS ONSH	ORE LP	DATE	February 8	3, 2012		_
WELL NAME NB	U 922-30L	.4BS		TD	10,609'	TVD	10,639' MD	<u> </u>
FIELD Natural Butte	S	COUNTY	Uintah ST	TATE Utah	FINIS	SHED ELEVATION	4,971'	
SURFACE LOCATION	NWSW	2096 FSL	800 FWL	Sec 30 T 9	S R 22E			
	Latitude:	40.005493	Longitude:	-109.487801		NAD 83		
BTM HOLE LOCATION	NWSW	1705 FSL	758 FWL	Sec 30 T 9	S R 22E			
	Latitude:	40.004420	Longitude:	-109.487949		NAD 83		
OBJECTIVE ZONE(S)	BLACKHA'	WK (Part of the I	Mesaverde Group	o)				
ADDITIONAL INFO	Regulatory	Agencies: BLM	(Minerals), BLM (	(Surface), UDOG	M Tri-County Heal	th Dept.		
GEOLOGIC	CAL					MEC	HANICAL	
FORMATI	ON				HOLE	CASIN	G	MUD
LOGO TOP		DEDTU			0175	0175		WEIGHT



Drilling Program 6 of 7



CASING PROGRAM

#### KERR-McGEE OIL & GAS ONSHORE LP

**DRILLING PROGRAM** 

CASING PROGRAM							DESIGN FACTORS				
										LTC	DQX
	SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TE	NSION
CONDUCTOR	14"	(	)-40'								
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,630	28.00	IJ-55	LTC	2.05	1.53	5.40	N/A
								10,690	8,650	279,000	367,174
PRODUCTION	4-1/2"	0	to	5,000	11.60	HCP-110	DQX	1.19	1.21		3.71
	4-1/2"	5.000	to	10.639'	11.60	HCP-110	LTC	1.19	1.21	5.32	

**Surface Casing:** 

(Burst Assumptions: TD = 13.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi) 0.66 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### **CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGH	IT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
TOP OUT	ΓCMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			NOTE: If well will circulate water t	o surface, op	tion 2 will be	utilized		
Option 2	LEAD	2,130'	65/35 Poz + 6% Gel + 10 pps gilsonite	200	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
Т	OP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	4,139'	Premium Lite II +0.25 pps	320	35%	12.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	6,500'	50/50 Poz/G + 10% salt + 2% gel	1,530	35%	14.30		1.31
			+ 0.1% R-3					

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

PRODUCTION

Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well.

1 centralizer on the first 3 joints and one every third joint thereafter.

#### **ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

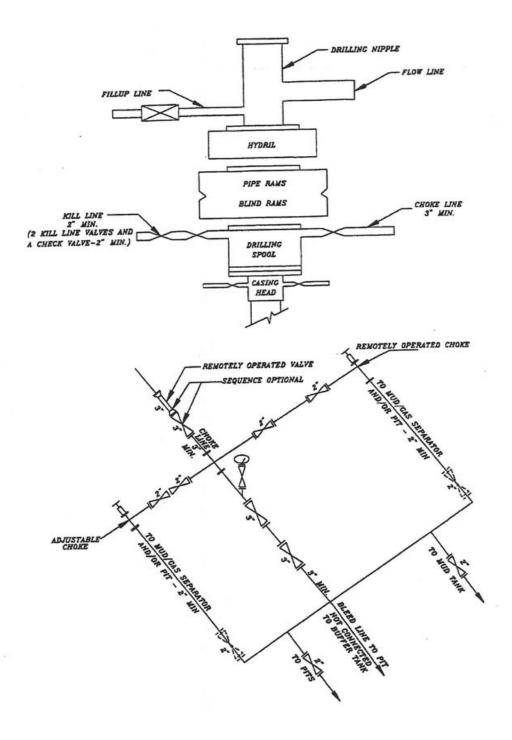
Surveys will be taken at 1,000' minimum intervals					
	Surveys v	will be taken	at 1,000'	minimum	intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

DRILLING ENGINEER:		DATE:	
	Nick Spence / Danny Showers / Chad Loesel	<del>-</del>	
DRILLING SUPERINTENDENT:		DATE:	
	Kenny Gathings / Lovel Young	-	

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

EXHIBIT A NBU 922-30L4BS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

#### Requested Drilling Options:

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

#### STATE OF UTAH **DEPARTMENT OF NATURAL RESOURCES** DIVISION OF OIL, GAS AND MINING

#### **ENTITY ACTION FORM**

Operator:

KERR McGEE OIL & GAS ONSHORE LP

Operator Account Number: N 2995

Address:

P.O. BOX 173779

city DENVER

state CO zip 80217

Phone Number: (720) 929-6247

#### Well 1

API Number	Weli	Name	QQ	Sec	Twp	Rng	County
4304751709	NBU 922-30L1BS		NWSW	30	098	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	s	pud Da	te		y Assignment fective Date
В	99999	2900		5/3/2012	2	5/1	6 12012
Comments: MIRI	U BUCKET RIG.	Ù	JSMVI	5		<del></del>	

SPUD WELL ON 05/03/2012 AT 1900 HRS.

BHL nusu

Well 2

API Number	Well Name NBU 922-30L4BS		QQ	Sec	Twp	Rng	County
4304751710			NWSW	30	098	22E	UINTAH
Action Code Current Entity New Entity Number Number			S	Spud Date		Entity Assignment Effective Date	
В	99999	3900		5/3/201	2	511	012012
Comments: MIRI	J BUCKET RIG.	1	USMI		<b>4</b>	1211	61201
SPU	D WELL ON 05/03/201	2 AT 2230 HRS. 🛛 🗜	SHL: r	11115	11.		

### Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751708	NBU 922-30K4BS		NWSW	30	098	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			ly Assignment fective Date	
B	9999	2900		5/4/201	2	5/1	613013
	U BUCKET RIG. D WELL ON 05/04/2012	-	SMVD				

#### **ACTION CODES:**

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity

JENN	HAW	KINS
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Signature OPERATIONS SPECIALIST III 5/9/2012

Date

E - Other (Explain in 'comments' section)

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463
SUNDR	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:		
Do not use this form for procurrent bottom-hole depth, IFOR PERMIT TO DRILL form	7.UNIT OF CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		<b>9. API NUMBER:</b> 43047517100000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 73779 720 929-6	9. FIELD and POOL or WILDCAT: 5M&TUTRAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	STATE: UTAH		
11. CHECI	K APPROPRIATE BOXES TO INDICA	TE NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT     Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
5/20/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
MIRU AIR RIG ON 5 SURFACE CASING	COMPLETED OPERATIONS. Clearly show to 5/18/2012. DRILLED SURFACT AND CEMENTED. WELL IS WANT JOB WILL BE INCLUDED WIREPORT.	E HOLE TO 2691'. RAN AITING ON ROTARY RIG.	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY May 25, 2012
NAME (PLEASE PRINT) Cara Mahler	<b>PHONE NUMB</b> 720 929-6029	ER TITLE Regulatory Analyst I	
SIGNATURE	. 20 020 0020	DATE	
N/A		5/25/2012	

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURC DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463
SUNDR	RY NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		9. API NUMBER: 43047517100000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 73779 720 929-0	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH	HIP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Merio	dian: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
_	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
7/6/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
12 DESCRIBE BRODOSED OR	COMPLETED OPERATIONS. Clearly show a	all portinent details including dates	<u>'</u>
	month of June 2012. Surface		Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY July 09, 2012
NAME (DI FACE DOUT)	BUONE NUMBER	ED   TITLE	
NAME (PLEASE PRINT) Jaime Scharnowske	<b>PHONE NUMB</b> I 720 929-6304	ER TITLE Regulartory Analyst	
SIGNATURE N/A		<b>DATE</b> 7/6/2012	

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURC DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463
SUNDR	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:		
Do not use this form for procurrent bottom-hole depth, IFOR PERMIT TO DRILL form	7.UNIT OF CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		<b>9. API NUMBER:</b> 43047517100000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 73779 720 929-0	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	STATE: UTAH		
11. CHECI	K APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
✓ DRILLING REPORT	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
Report Date: 7/12/2012	_	SITA STATUS EXTENSION	
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
MIRU ROTARY RI 7/10/2012. RAN 4-1 PRODUCTION CAS HRS. DETAILS OF	COMPLETED OPERATIONS. Clearly show a G. FINISHED DRILLING FROM /2" 11.6# I-80 PRODUCTION SING. RELEASED SST 54 RIG F CEMENT JOB WILL BE INCLU EPORT. WELL IS WAITING ON ACTIVITIES.	M 2691' TO 10650' ON N CASING. CEMENTED ON 7/12/2012 @ 23:30 DED WITH THE WELL	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY July 20, 2012
NAME (PLEASE PRINT) Cara Mahler	<b>PHONE NUMB</b> 720 929-6029	ER TITLE Regulatory Analyst I	
SIGNATURE N/A		<b>DATE</b> 7/17/2012	

RECEIVED: Jul. 17, 2012

**Sundry Number: 29647 API Well Number: 43047517100000** 

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	3	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463
SUNDR	Y NOTICES AND REPORTS ON	WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	posals to drill new wells, significantly deep reenter plugged wells, or to drill horizontal n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		<b>9. API NUMBER:</b> 43047517100000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	PHC n Street, Suite 600, Denver, CO, 80217 377	ONE NUMBER: 79 720 929-6	9. FIELD and POOL or WILDCAT: 5NIATUERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	IIP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Meridian:	S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICATE N	ATURE OF NOTICE, REPOR	T, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
SUBSEQUENT REPORT	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
Date of Work Completion:	L DEEPEN L I	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT Date of Spud:	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
✓ DRILLING REPORT	L TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
Report Date: 9/5/2012	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
9/3/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
	COMPLETED OPERATIONS. Clearly show all pethe month of August 2012. We	•	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY September 05, 2012
Jaime Scharnowske	720 929-6304	Regulartory Analyst	
SIGNATURE N/A		<b>DATE</b> 9/5/2012	

Sundry Number: 30547 API Well Number: 43047517100000

	STATE OF UTAH				FORM 9
	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI	-	3	5.LEASE UTU463	DESIGNATION AND SERIAL NUMBER:
SUNDR	Y NOTICES AND REPORTS	ON	WELLS	6. IF INDI	AN, ALLOTTEE OR TRIBE NAME:
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	posals to drill new wells, significantly reenter plugged wells, or to drill horiz n for such proposals.	y deep ontal l	en existing wells below laterals. Use APPLICATION		CA AGREEMENT NAME: AL BUTTES
1. TYPE OF WELL Gas Well					NAME and NUMBER: 2-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.			<b>9. API NU</b> 430475	MBER: 517100000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 802		ONE NUMBER: 720 929-6		and POOL or WILDCAT: AL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL				COUNTY	
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	HP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Me	ridian:	S	STATE: UTAH	
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE N	ATURE OF NOTICE, REPOR	T, OR O	THER DATA
TYPE OF SUBMISSION			TYPE OF ACTION		
	ACIDIZE		ALTER CASING		CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS		CHANGE TUBING		CHANGE WELL NAME
	CHANGE WELL STATUS		COMMINGLE PRODUCING FORMATIONS		CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	F	FRACTURE TREAT		NEW CONSTRUCTION
	OPERATOR CHANGE	F	PLUG AND ABANDON		PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	F	RECLAMATION OF WELL SITE		RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION		SIDETRACK TO REPAIR WELL		TEMPORARY ABANDON
	TUBING REPAIR		/ENT OR FLARE		WATER DISPOSAL
✓ DRILLING REPORT Report Date:	☐ WATER SHUTOFF		SI TA STATUS EXTENSION		APD EXTENSION
10/3/2012	WILDCAT WELL DETERMINATION		OTHER	OTHE	R:
12 DESCRIBE PROPOSED OR	COMPLETED OPERATIONS. Clearly show	v all no	rtinent details including dates d		!
	completing the well. Well T	-	_	oi FOF	Accepted by the Otah Division of I, Gas and Mining R RECORD ONLY October 05, 2012
NAME (PLEASE PRINT) Lindsey Frazier	<b>PHONE NUM</b> 720 929-6857	BER	TITLE Regulatory Analyst II		
SIGNATURE N/A			<b>DATE</b> 10/3/2012		

Sundry Number: 31291 API Well Number: 43047517100000

	STATE OF UTAH			F	ORM 9
[	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI			5.LEASE DESIGNATION AND SERIAL NUI UTU463	MBER:
SUNDR	RY NOTICES AND REPORTS	S ON V	WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAM	E:
	oposals to drill new wells, significantly reenter plugged wells, or to drill horiz n for such proposals.			7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES	
1. TYPE OF WELL Gas Well				8. WELL NAME and NUMBER: NBU 922-30L4BS	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	SHORE, L.P.			9. API NUMBER: 43047517100000	
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 802		<b>NE NUMBER:</b> 9 720 929-6	9. FIELD and POOL or WILDCAT: 5NATHERAL BUTTES	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL				COUNTY: UINTAH	
QTR/QTR, SECTION, TOWNSH	HIP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Me	eridian:	S	STATE: UTAH	
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NA	ATURE OF NOTICE, REPOR	RT, OR OTHER DATA	
TYPE OF SUBMISSION			TYPE OF ACTION		
	ACIDIZE	Па	LTER CASING	CASING REPAIR	
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	С	HANGE TUBING	CHANGE WELL NAME	
	CHANGE WELL STATUS	□ c	OMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE	
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	☐ FF	RACTURE TREAT	NEW CONSTRUCTION	
	OPERATOR CHANGE	☐ PI	LUG AND ABANDON	PLUG BACK	
SPUD REPORT	✓ PRODUCTION START OR RESUME	□ RI	ECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION	
Date of Spud:	REPERFORATE CURRENT FORMATION	□ sı	IDETRACK TO REPAIR WELL	TEMPORARY ABANDON	
	TUBING REPAIR		ENT OR FLARE	WATER DISPOSAL	
DRILLING REPORT     Report Date:	WATER SHUTOFF		I TA STATUS EXTENSION	APD EXTENSION	
10/19/2012					
	WILDCAT WELL DETERMINATION		THER	OTHER:	
The subject wel	COMPLETED OPERATIONS. Clearly show II was placed on production I History will be submitted to Report.	n on 1	10/19/2012. The	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONL October 23, 2012	Y
NAME (PLEASE PRINT) Lindsey Frazier	<b>PHONE NUM</b> 720 929-6857	IBER	TITLE Regulatory Analyst II		
SIGNATURE N/A			<b>DATE</b> 10/23/2012		

Sundry Number: 31533 API Well Number: 43047517100000

	STATE OF UTAH				FORM 9
ι	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI		3	5.LEASE UTU46	<b>DESIGNATION AND SERIAL NUMBER</b>
SUNDR	RY NOTICES AND REPORTS	ON	WELLS	6. IF INDI	AN, ALLOTTEE OR TRIBE NAME:
	posals to drill new wells, significantly reenter plugged wells, or to drill horiz n for such proposals.				r CA AGREEMENT NAME: AL BUTTES
1. TYPE OF WELL Gas Well					NAME and NUMBER: 22-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.			9. API NU 430475	MBER: 517100000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 802		ONE NUMBER: 720 929-6		and POOL or WILDCAT: AL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL				COUNTY	
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	HIP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Me	ridian:	S	STATE: UTAH	
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE N	ATURE OF NOTICE, REPOR	RT, OR O	THER DATA
TYPE OF SUBMISSION			TYPE OF ACTION		
	ACIDIZE		ALTER CASING		CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS		CHANGE TUBING		CHANGE WELL NAME
	CHANGE WELL STATUS		COMMINGLE PRODUCING FORMATIONS		CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	☐ F	FRACTURE TREAT		NEW CONSTRUCTION
	OPERATOR CHANGE	F	PLUG AND ABANDON		PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	□ F	RECLAMATION OF WELL SITE		RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION		SIDETRACK TO REPAIR WELL		TEMPORARY ABANDON
	TUBING REPAIR		/ENT OR FLARE		WATER DISPOSAL
✓ DRILLING REPORT Report Date:	WATER SHUTOFF		SI TA STATUS EXTENSION		APD EXTENSION
11/2/2012	WILDCAT WELL DETERMINATION	$\Box$	THER	OTHE	:R:
40 DECODINE DRODOCED OR		!!			<u>'</u>
	completed operations. Clearly show eted, finishing well completi 10,650.			oi FOF	Accepted by the Utah Division of I, Gas and Mining R RECORD ONLY November 02, 2012
NAME (PLEASE PRINT)	PHONE NUM	BER	TITLE		
Lindsey Frazier	720 929-6857	DER	Regulatory Analyst II		
SIGNATURE N/A			<b>DATE</b> 11/2/2012		

Sundry Number: 32626 API Well Number: 43047517100000

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MININ		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU463
SUNDR	Y NOTICES AND REPORTS OF	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	posals to drill new wells, significantly de reenter plugged wells, or to drill horizonta n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-30L4BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		9. API NUMBER: 43047517100000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	PI n Street, Suite 600, Denver, CO, 80217 3	HONE NUMBER: 779 720 929-6	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2096 FSL 0800 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NWSW Section:	IIP, RANGE, MERIDIAN: 30 Township: 09.0S Range: 22.0E Meridia	n: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPOF	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	CHANGE TO PREVIOUS PLANS  CHANGE WELL STATUS  DEEPEN  OPERATOR CHANGE  PRODUCTION START OR RESUME  REPERFORATE CURRENT FORMATION  TUBING REPAIR  WATER SHUTOFF  WILDCAT WELL DETERMINATION  COMPLETED OPERATIONS. Clearly show all parts of the distribution of the distri		CASING REPAIR  CHANGE WELL NAME  CONVERT WELL TYPE  NEW CONSTRUCTION  PLUG BACK  RECOMPLETE DIFFERENT FORMATION  TEMPORARY ABANDON  WATER DISPOSAL  APD EXTENSION  OTHER:  DEPths, volumes, etc.  Accepted by the Utah Division of Oil, Gas and Mining  FOR RECORD ONLY  December 03, 2012
NAME (PLEASE PRINT)	PHONE NUMBER	TITLE	
Lindsey Frazier SIGNATURE	720 929-6857	Regulatory Analyst II  DATE	
N/A		12/3/2012	

Form 3160-4 (August 2007)

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0137 Expires: July 31, 2010

### WELL COMPLETION OR RECOMPLETION REPORT AND LOG

	WELL (	COMPL	ETION C	R R	ECO	MPLE	ΕΤΙΟ	N RE	EPO	RT	AND L	.OG				ease Serial JTU463	No.		
la. Type of	_	Oil Well	☑ Gas `	Well	_ I	Ory	Ot	her							6. If	Indian, Al	lottee o	or Tribe N	Vame
b. Type of	f Completion	Othe	lew Well er	□ W	ork Ov	/er [	□ Dec	epen	<u> </u>	Plug	Back	☐ Di	ff. Re	esvr.	7. U	nit or CA	Agreen	nent Nam	e and No.
2. Name of	Operator MCGEE OIL	8 GAS		Maile	lindac	Contac	et: LIN	IDSE	/ A FF	RAZ	IER		_		8. L	ease Name	and W	ell No.	····
	PO BOX 1	173779		ниан.	inase	y.irazie	erwar				. (include	area c	ode)			IBU 922-3 PI Well N		3	
4 Tasstian	DENVER,			1.	1		F 1	Ph:	720-	-929	9-6857								7-51710
	of Well (Re							•			<sub> </sub> *				10. I	Field and P	ool, or BUTT	Explorat ES	ory
At surfa At top p	rod interval i		SL 800FWL elow NW:			N Lat, <sup>2</sup> L 758F		37801	W Lo	on					11. 5	Sec., T., R. r Area Se	, M., oı ∋c 30 T	Block at 9S R22	nd Survey E Mer SLB
At total	depth NW	SW 1654	4FSL 799FV	VL .	BH	l	64	H	5N	Λ						County or I	Parish		State JT
14. Date Sp 05/03/2				ate T.E /10/20		hed			16. I	Date  O & 2	Complete A 🔯 9/2012	ed Ready	to Pr	od.		Elevations	(DF, K )71 GL	B, RT, G	
18. Total D	epth:	MD TVD	10650 10620		19.	Plug Ba	ack T.	D.:	MD TV	5	10	582 552	Т	20. Dep	th Bri	dge Plug S	et:	MD TVD	
21. Type E	lectric & Oth	er Mecha	nical Logs R	un (Su	omit co	opy of e	ach)					22. W		ell corec		<b>№</b> No	☐ Ye	s (Submi	t analysis)
BHV-SI	D/DSN/ACT 	K-CBL/C	CL/GR/TE	ΛP							Ì			ST run? ional Su		⊠ No □ No			t analysis) t analysis)
23. Casing ar	nd Liner Reco	ord (Repo	ort all strings	set in	well)	7										r			
Hole Size	Size/G	rade	Wt. (#/ft.)		op ID)	Botte (MI		Stage D	Cemer Depth	nter	No. of Type o	f Sks. & f Ceme		Slurry (BB		Cement	Top*	Amo	unt Pulled
20.000	<del> </del>	000 STL	36.7		0	<del></del>	40			4	_		28						
11.000 7.875	<del>                                     </del>	25 IJ-55 0 P-110	28.0 11.6		0 0	T	2682		,	-			550				0	<del> </del>	
	4.50	0 F-1 10	11.0	<u> </u>		<del> </del> '	0627			一	_		070			-	2806		-
										$\neg$						<del>                                     </del>		<u> </u>	<del></del>
										$\neg$			_				_		
24. Tubing	Record																		
	Depth Set (M		acker Depth	(MD)	Si	ze	Depth	Set (N	AD)	Pa	acker Dep	th (MI	2)	Size	De	pth Set (M	ID)	Packer I	Depth (MD)
2.375 25. Producii		0126			<u> </u>		26.1	Perfora	stion D						<u> </u>				
	ormation		Тор		Do	44	20.						$\overline{}$	<u> </u>			<del></del>		
A)	WASA	ATCH		7369	00.	ttom 7370	1	P	eriora	itea i	interval 7369 T	O 7370	+	Size 0.3		No. Holes	OPE	Perf. S	Status
B)	MESAVE			7385		10434	+				7385 TO			0.3	<del></del>		OPE		
C)			<u> </u>								. 000 10	10-10	+	0.0			101 -	11	_
D)						_													_
27. Acid, Fr	acture, Treat	ment, Cer	nent Squeeze	, Etc.															
]	Depth Interva										nount and		_						
	736	9 10 104	434 PUMP 1	2,323	BBLS	SLICK H	120 AN	ND 302	2,139 L	BS 3	30/50 OTT	AWA S	SAND				_		
28. Producti	ion - Interval	A				***************************************					_				_				_
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL		Gas MCF		ater BL		Dil Gra			as .		Product	ion Method	<del></del>	·····	•
10/19/2012	10/20/2012	24	Trouble trion	0.		3217.		840.0	1	Corr. A	νΙ	١	ravity			FLO	WS FR	OM WELI	L
Choke Size	Tbg. Press. Flwg. 2341	Csg. Press	24 Hr. Rate	Oil BBL		Gas MCF		ater BL		Gas:Oi Ratio	1	W	ell Sta	tus					
20/64	SI	3149.0		DBL C		мсг 3217		840		cau()		1	P	<b>SW</b>					
28a. Produc	tion - Interva	l B		-															
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL		Gas MCF		ater BL		Dil Gra Corr. A			as ravity		Product	ion Method			
								_			•	ľ				F	REC	EIVE	ħ
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL		Gas MCF		ater BL		Gas:Oi Ratio	1	W	ell Sta	tus				7 201	
	<u> </u>			L									_				-	. 401	4

201 D. 3	Lastina Tata	-1.0							_			
Date First	luction - Interv	Hours	Test	Oil	Gas	Iw.	0.7.6	- Ia	_	I		
Produced	Date	Tested	Production	BBL	MCF	Water BBL	Oil Gravity Corr. API	Gas Grav		Production Method		
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Wel	li Status			
28c. Prod	luction - Interv	al D										
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Grav		Production Method		
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Wel	ll Status			. (10.000
29. Dispo	osition of Gas(S	Sold, used f	or fuel, vent	ed, etc.)	1							
30. Sumn	nary of Porous	Zones (Inc	lude Aquife	rs):					31. For	mation (Log) M	arkers	
tests,	all important a including deptle coveries.	zones of po h interval to	rosity and coested, cushic	ontents there on used, time	eof: Cored in e tool open,	ntervals and flowing and	all drill-stem shut-in pressur	es		\ <i>D</i>		
	Formation		Тор	Bottom		Description	ons, Contents, et	c.		Name		Top Meas. Depth
The f surfa ft; LT	ional remarks ( irst 210 ft. of t ce hole was d C P-110 csg v ry, perforation	he surface rilled with was run fro	e hole was an 11 in. b om 5028 ft.	drilled with it. DQX P- to 10,627	·110 csg wa	as run from	mainder of surface to 50: onological well	28 I	BIR MA WA	EEN RIVER LD'S NEST HOGANY SATCH SAVERDE		1410 1774 2254 4726 7378
1. Ele	e enclosed attace ectrical/Mechan andry Notice for	nical Logs				2. Geologic			B. DST Rep	oort	4. Direction	al Survey
o. su	nary Nonce 10	r brugging	anu cement	vermeation	(	6. Core Ana	uysis	7	Other:			
			Electr	onic Subm For KERR	ission #1677	708 Verified	l by the BLM V ONSHORE L,	Well Inform , sent to th	mation Sys he Vernal		ached instruction	ns):
Name	e(please print)	LINUSEY	<u>A</u> FKAZIE	к			Title <u>I</u>	REGUAL	TORY AN	ALYST	RECE	IVED
Signa	ture	(Electroni	c Submissi	on)			Date _	12/20/201	2			
											DEC 2	/ ZU1Z
Title 18 I	ISC Section	1001 and T	itle 43 II S	C Section 1	212 make i	t a crime for	any person kno	wingly and	d willfully	to make to any	lors er thousand our ac	200000

of the United States any false, fictitious or fradulent statements or representations as to any matter within its jurisdiction.

### **Operation Summary Report**

 Well: NBU 922-30L4BS GREEN
 Spud Date: 5/18/2012

 Project: UTAH-UINTAH
 Site: NBU 922-30L PAD
 Rig Name No: SST 54/54, CAPSTAR 310/310

 Event: DRILLING
 Start Date: 4/30/2012
 End Date: 7/12/2012

Active Datum: RKB @4,989.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/800/0/0

Date	3 2 7 7 7 5 5 8	Time art-End	Duration	Phase	Code	Sub	P/U	MD From Operation
5/18/2012		- 12:00	(hr)   3.50	DRLSUR	01	Code C	P	(usft)   SKID TO NBU 922-30L4BS, WELL 4 OF 6, SPOT RIG,
								RIG UP
		- 14:00	2.00	DRLSUR	01	В	Р	WELD ON ROTATING HEAD
		- 18:00	4.00	DRLSUR	01	G	Р	CHANGE OUT FRONT HYDRAULIC PUMP TO SWIVEL, CHANGE OUT ALL FILTERS
		- 19:30	1.50	DRLSUR	01	В	Р	RIG UP BLOWIE LINE
		- 20:00	0.50	DRLSUR	01	В	Р	PUT BHA ON RACKS, AIR OUT PUMPS
	20:00	- 21:30	1.50	DRLSUR	02	D	P	DRILL 12.25" SURFACE HOLE F/ 49'- 210'  ROP= @ 80 FPH  WOB= 14/22K  RPM= 55/105  SPP=800/500  GPM= 595  TRQ= 2600/1900  PU/SO/ROT = 49/46/47  HOLE IN GOOD SHAPE
		- 23:30	2,00	DRLSUR	06	Α	Р	PULL OUT OF HOLE, LAY DOWN 12.25" BIT. PICK UP 11.00" BIT AND DIRECTIONAL TOOLS. TRIP IN HOLE
EVO(2010		- 0:00	0.50	DRLSUR	02	D	P	DRILL 11.00" SURFACE HOLE F/210'-255'  ROP= @ 80 FPH  WOB= 22/25K  RPM= 55/105  SPP=800/575  GPM= 599  TRQ= 2800/1900  PU/SO/ROT = 45/40/43  HOLE IN GOOD SHAPE
5/19/2012		- 7:00	7.00	DRLSUR	02	D	P	DRILL 11.00" SURFACE HOLE F/255'-1161'  ROP= @ 129 FPH  WOB= 23/30K  RPM= 55/105  SPP=850/575  GPM= 599  TRQ= 2800/1900  PU/SO/ROT = 50/43/45  HOLE IN GOOD SHAPE
	7:00	- 7:30	0.50	DRLSUR	07	Α	Р	RIG SERVICE
	7:30	- 9:30	2.00	DRLSUR	80	Α	S	CHANGE OUT TURBO ON MUD PUMP 1.
	9:30	- 0:00	14.50	DRLSUR	02	D	P	DRILL 11.00" SURFACE HOLE F/1116'-2540'  ROP= @ 129 FPH  WOB= 25/30K  RPM= 55/105  SPP=1120/880  GPM= 599  TRQ= 3000/1900  PU/SO/ROT = 105/89/96  HOLE IN GOOD SHAPE

							KIES RE Summa	GION ry Report
Well: NBU 922-3	0L4BS G	REEN	<u> </u>			<u> </u>		Spud Date: 5/18/2012
Project: UTAH-U			***************************************	Site: NBL	J 922-30L	PAD		Rig Name No: SST 54/54, CAPSTAR 310/310
Event: DRILLING	<del></del>			Start Date	n: 4/20/20	110	T	End Date: 7/12/2012
Active Datum: RI		RQ (()) (ah	ove Mean Se		T	0/0/0/26/PM/S/2096/W/0/800/0/0		
Level)	<b>(D (2)</b> 4,5(	oo,oousii (ab	Ove Mean Ge	a		,	,, 0, 22, 200	10/01/20/1 NII/01/2000/010
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
5/20/2012	0:00	- 2:00	2.00	DRLSUR	02	D	P	DRILL 11.00" SURFACE HOLE F/2540'-2690'  ROP= @ 129 FPH  WOB= 25/30K  RPM= 55/105  SPP=1120/880  GPM= 599  TRQ= 3000/1900  PU/SO/ROT = 105/89/96  HOLE IN GOOD SHAPE
	2:00	- 3:00	1.00	DRLSUR	05	С	P	CIRCULATE PRIOR TO TRIP
	3:00	- 5:30	2.50	DRLSUR	06	D	P	PULL OUT OF HOLE. LAY DOWN 11.00" BIT AND DIRECTIONAL TOOLS.
	5:30	- 9:00	3.50	DRLSUR	12	С	P	PJSM ///RIG UP AND RUN 60 JT'S, 8-5/8", 28#, J-55, LT&C CSG /// SHOE SET @ 2663' /// BAFFLE @ 2617'
	9:00	- 12:30	3.50	DRLSUR	12	С	P	PJSM /// PUMP 20 BBLS WATER AHEAD FOLLOWED BY 20 BBL GEL WATER FLUSH /// LEAD= 200 SX CLASS G CMT @ 11.0 WT & 3.82 YIELD /// TAIL= 200 SX CLASS G CMT @ 15.8 WT & 1.15 YIELD /// DROP PLUG & DISPLACE W/ 170.8 BBL'S WATER /// PLUG DN /// BUMP PLUG W/ 800 PSI /// FINAL LIFT = 530 PSI /// CHECK FLOATS-HELD W/ .5 BBL'S BACK /// FULL RETURNS THRU OUT JOB /// 30 BBL'S CMT TO SURFACE RUN 200' OF 1" DN BACK SIDE & TOP OUT W/ 150 SX CLASS G CMT @ 15.8 WT & 1.15 YIELD /// CMT TO SURFACE ///
7/4/2012	11:30	- 12:30	1.00	MIRU	01	С	Р	RIG RELEASED AT 12:30
17-112012		- 14:00	1.50	PRPSPD	01	В	P	SKID ON WELL #4 ,,RIG UP ROTARY TOOLS  NIPPLE UP BOP,MI SWACO DIVERTER,FLOW AND FLARE LINES
		- 18:00	4.00	PRPSPD	15	Α	P	TEST BOP WITH A-1 TESTING,SWACO DIVERTER TO 1000,ANNULAR 2500,FLOOR VALVES,RAMS,CHOKE AND KILL LINE 5000,MANIFOLD 5000,CASING TO 1500 FOR 30/MINUTES
		- 18:30	0.50	PRPSPD	14	В	P	INSTALL WEARRING
		- 19:30	1.00	PRPSPD	06	Α	Р	PICK UP BIT #1 MUD MTR, DIR TOOLS
		- 21:00	1.50	PRPSPD	21	D	Ž	WAIT ON MWD TOOL DIAGNOSES AND SURFACE TEST
		- 22:30	1.50	PRPSPD	06	A	P	TRIP IN HOLE
7/5/0040	22:30	- 0:00	1.50	PRPSPD	06	G	S	TRIP OUT FOR PLUGGED DP
7/5/2012	0:00 3:30	- 3:30 - 5:00	3.50	PRPSPD	06	G	X	TRIP OUT UNPLUG LCM OFF TOP OF MUD MTR
	3.30	- 5:00	1,50	DRLPRO	02	F	Р	DRILL CEMENT AND SHOE TRACK TO 2700'

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Vell: NBU 922-3	OL4BS	REEN	· <del>-</del>					Spud Date: 5/18/	2012			
roject: UTAH-U	JINTAH			Site: NBU	922-30L	PAD		****	Rig Name No: SST 54/54, CAPSTAR 310/310			
vent: DRILLING	3			Start Date	· 4/30/20	12	Τ		End Date: 7/12/2012			
ctive Datum: R	KB @4.9	89 00usft (ab	ove Mean Se				/S/22/E/30/	0/0/26/PM/S/209				
evel)		00,000011 (40	ovo moan oc	~					3,7,7,0,0,0,0,0			
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation			
	5:00	- 7:00	2.00	DRLPRO	02	D	P		DRLG 2700' TO 2917=217 @ 108 FPH WOB 18K/22 TD RPM 60 MM RPM 113 PUMPING 540 GPM / 150 SPM PSI ON/OFF 1520/1900 / DIFF380 TORQUE HIGH/LOW 4900/7000 PU 100 / SO 95 / ROT 100 MUD WT IN 8.5 / OUT 8.5 / VIS 27 NOV RUNNING CONE WITH 2 CENTIFUGES ON DEWATER			
	7.00								SWACO OFF LINE NO SLIDE			
		- 7:30	0.50	DRLPRO	07	A	P		RIG SERVICE			
	7:30	- 12:00	4.50	DRLPRO	06	Н	Z		ROUND TRIP FOR MWD TOOL FAILURE, TAKING AZI			
	12:00	- 0:00	12.00	DRLPRO	02	D	P		BUT NOT INCLINATION  DRLG 2917 TO 4520=1603 @ 133FPH  WOB 18K/22  PUMPING ANCO CARB SWEEPS@ 4100'  TD RPM 58  MM RPM 113  PUMPING 540 GPM / 150 SPM  PSI ON/OFF 1520/1900 / DIFF380  TORQUE HIGH/LOW 4900/8100  PU 110 / SO 98 / ROT 104  MUD WT IN 8.5 / OUT 8.5 / VIS 27  NOV RUNNING CONE WITH 2 CENTIFUGES ON  DEWATER  SWACO OFF LINE  SLIDE 208' 13%  ROTATE 1385 87%			
7/6/2012	0:00	- 1:00	1.00	DRLPRO	02	D	P		5-8' FLARE DRLG 4520 TO 4632=112 @ 112FPH WOB 18K/22 PUMPING ANCO CARB SWEEPS@ 4100' TD RPM 58 MM RPM 113 PUMPING 540 GPM / 150 SPM PSI ON/OFF 1520/1900 / DIFF380 TORQUE HIGH/LOW 4900/8100 PU 110 / SO 98 / ROT 104 MUD WT IN 8.5 / OUT 8.5 / VIS 27 NOV RUNNING CONE WITH 2 CENTIFUGES ON DEWATER SWACO OFF LINE SLIDE 4% ROTATE 96%			
	1:00	- 1:30	0.50	DRLPRO	03	Α	s		5' FLARE CONN GAS REAM TIGHT CONN			

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Well: NBU 922-3	0L4BS G	REEN						Spud Date: 5/1	8/2012		
Project: UTAH-U	INTAH			Site: NBL	922-30L	. PAD		74	Rig Name No: SST 54/54, CAPSTAR 310/310 End Date: 7/12/2012		
Event: DRILLING	·····			Start Date	e: 4/30/20	112	T				
Active Datum: RI	(B @4.98	39.00usft (ab	ove Mean S				/S/22/E/	30/0/0/26/PM/S/20			
evel)		(									
Date	E000000 277	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
	9:30	- 10:30 - 14:30	1.00	DRLPRO DRLPRO	22 02	G D	P X P	(USII)	DRLG 4632 TO 5522=890@111 FPH WOB 18K/22 PUMPING ANCO CARB SWEEPS@ 4100' TD RPM 58 MM RPM 113 PUMPING 540 GPM / 150 SPM PSI ON/OFF 1520/1900 / DIFF380 TORQUE HIGH/LOW 4900/8100 PU 110 / SO 98 / ROT 104 MUD WT IN 8.5 / OUT 8.5 / VIS 27 NOV RUNNING CONE WITH 2 CENTIFUGES ON DEWATER SWACO OFF LINE SLIDE 20 2% ROTATE 870 98% LOST RETURNS TOTAL 300 BBLS,MIX LCM & PUMP AT 80 STKS 700 PSI DRLG 5522 TO 5913=391@98 FPH WOB 18K/22 PUMPING 30 SX LCM HR,FOR LOSSES TD RPM 58 MM RPM 113 PUMPING 540 GPM / 120 SPM PSI ON/OFF 1300/1600 / DIFF300 TORQUE HIGH/LOW 4900/8100 PU 110 / SO 98 / ROT 104 MUD WT IN 8.5 / OUT 8.5 / VIS 27 NOV RUNNING CONE WITH 2 CENTIFUGES ON DEWATER SWACO OFF LINE SLIDE 15%		
	14:30	- 15:30	1.00	DRLPRO	22	G	x		ROTATE 84%  LOST RETURNS TOTAL 250 BBLS,MIX LCM & PUMP AT 80 STKS 700 PSI,REGAIN RETURNS		
		- 16:00	0.50	DRLPRO	07	Α	Р		RIG SERVICE		
	16:00	- 0:00	8.00	DRLPRO	02	D	P		DRLG 5913 TO 6590=677@84 FPH WOB 18K/22 PUMPING 30 SX LCM HR,FOR LOSSES TD RPM 58 MM RPM 113 PUMPING 540 GPM / 120 SPM PSI ON/OFF 1300/1600 / DIFF300 TORQUE HIGH/LOW 4900/8100 PU 170 / SO 145 / ROT 158 MUD WT IN 8.5 / OUT 8.5 / VIS 27 NOV RUNNING 2 CENTIFUGES CONVENTIONAL SWACO OFF LINE SLIDE 60' 9%		

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oject: UTAH-Ul ent: DRILLING tive Datum: Ri vel) Date 7/7/2012	· · · · · · · · · · · · · · · · · · ·		Site: NBU							
tive Datum: Rh vel) Date				J 922-30L	PAD			Rig Name No: SST 54/54, CAPSTAR 310/310		
vel) Date	(B @4,989.00usft (ab	Otart						End Date: 7/12/2012		
		ove Mean S	ea	UWI: N\	N/SW/0/9	9/S/22/E/30	0/0/0/26/PM/S/20			
7/7/2012	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
	0:00 - 12:00 12:00 - 12:30 12:30 - 0:00	0.50 11.50	DRLPRO DRLPRO DRLPRO	02	A	P		DRLG 6590 TO 7490=900@62 FPH  WOB 18K/22  TD RPM 48  MM RPM 104  PUMPING 480 GPM / 120 SPM  PSI ON/OFF 1400/1680 / DIFF300  TORQUE HIGH/LOW 7800/10500  PU 210 / SO 150 / ROT 170  MUD WT IN 8.9 / OUT 9.0 / VIS 34  NOV RUNNING 2 CENTIFUGES CONVENTIONAL  SWACO OFF LINE  SLIDE 65' 7%  ROTATE 845 93%  10' NORTH 2' WEST OF CENTER  RIG SERVICE  DRLG 7490 to 7965= 475@41 FPH  WOB 18K/22  TD RPM 48  MM RPM 104  PUMPING 480 GPM / 120 SPM  PSI ON/OFF 1400/1680 / DIFF300  TORQUE HIGH/LOW 7800/10500  PU 225 / SO 160 / ROT 178  MUD WT IN 8.9 / OUT 9.0 / VIS 34  NOV RUNNING 2 CENTIFUGES CONVENTIONAL  SWACO OFF LINE  SLIDE 20' 4%  ROTATE 457' 96%		
7/8/2012	0:00 - 15:00	15.00	DRLPRO	02	D	P		10' NORTH 1.5 EAST OF CENTER DRLG 7965 TO 8823=858@57 FPH WOB 22/24K TD RPM 50 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1700/2050 / DIFF350 TORQUE HIGH/LOW 9500/11200 PU 235 / SO 165 / ROT 185 MUD WT IN 9.5 / OUT 9.2 / VIS 38 NOV RUNNING 1 CENTRIFUGE CONVENTIONAL SWACO ON LINE 100PSI HELD SLIDE 105' 12% ROTATE 754 88 % 21 NORTH 1' WEST OF CENTER		

Well: NBU 922-3	30L4BS G	REEN						Spud Date: 5/18/2012		
Project: UTAH-U	JINTAH			Site: NBL	J 922-30L	.PAD		Rig Name No: SST 54/54, CAPSTAR 310/310		
vent: DRILLIN	G			Start Date	e: 4/30/20	12		End Date: 7/12/2012		
ctive Datum: R evel)	KB @4,9	89.00usft (at	oove Mean S	ea —————	UWI: N\	N/SW/0/9	)/S/22/E/30	0/0/0/26/PM/S/2096/W/0/800/0/0		
Date	St	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)		
		- 17:00	1.00	DRLPRO	02	D	x	DRLG 8823 TO 8893=70@46 FPH WOB 22/24K TD RPM 50 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1700/2050 / DIFF350 TORQUE HIGH/LOW 9500/11200 PU 235 / SO 165 / ROT 185 MUD WT IN 9.7 / OUT 9.5 / VIS 38 NOV RUNNING 1 CENTRIFUGE CONVENTIONAL SWACO ON LINE 100PSI HELD SLIDE 105' 12% ROTATE 754 88 % 21 NORTH 1' WEST OF CENTER 8' FLARE LOST 120 BBLS MUD,MIX LCM TO REGAIN CIRC,,SHAKERS NOT BYPASSED		
	18:00	- 19:00	1.00	DRLPRO	80	В	Z	WORK ON TOP DRIVE COM CABLE, PUMP OUT 3 JTS LAYDOWN SAME,, CIRC 80 STKS F/ REPAIR		
		- 23:30	4.50	DRLPRO	02	D	P	DRLG 8893 TO 9139 =246@55 FPH WOB 22/24K TD RPM 50 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1700/2050 / DIFF350 TORQUE HIGH/LOW 9500/11200 PU 235 / SO 165 / ROT 200 MUD WT IN 9.9 / OUT 9.7 / VIS NOV RUNNING 1 CENTRIFUGE CONVENTIONAL SWACO ON LINE SLIDE 0% ROTATE 100% 11 NORTH 1EAST OF CENTER 10" FLARE		
		- 0:00	0.50	DRLPRÓ	22	G	X	LOST RETURNS MIX LCM ,PUMP @ 80 STKS 160 BBLS LOST		
7/9/2012	0:00	- 0:30	0.50	DRLPRO	22	G	Х	LOST CIRC 200 BBLS		
	0:30	- 12:00	11.50	DRLPRO	02	D		DRLG 9139 TO 9737 =598@52 FPH WOB 22/24K TD RPM 50 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1700/2050 / DIFF350 TORQUE HIGH/LOW 10500/12200 PU 235 / SO 165 / ROT 200 MUD WT IN 9.9 / OUT 9.7 / VIS NOV RUNNING 1 CENTRIFUGE CONVENTIONAL SWACO ON LINE HOLD 100 PSI BACK SLIDE 0% ROTATE 100% 2' SOUTH 11'EAST OF CENTER 10" FLARE		

### **Operation Summary Report**

Well: NBU 922-	30L4BS (	GREEN						Spud Date: 5/18	3/2012		
Project: UTAH-I	JINTAH			Site: NBU	J 922-30L	. PAD			Rig Name No: SST 54/54, CAPSTAR 310/310		
Event: DRILLIN	G			Start Date	e: 4/30/20	)12			End Date: 7/12/2012		
Active Datum: F Level)	RKB @4,9	989,00usft (ab	ove Mean So	ea	UWI: N	W/SW/0/9	)/S/22/E/30	0/0/0/26/PM/S/20	96/W/0/800/0/0		
Date	s	Time tart-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
		- 13:30	1.50	DRLPRO	08	В	S	(autry)	TRIP OUT TO 9393' INSTALL FLOOR VALVE,CIRC WITH TOP DRIVE @ 80 STKS 1050 PSI WHILE CHANGING TOP DRIVE COMMUNICATION CABLE,,TIH		
		- 14:00 - 0:00	0.50	DRLPRO DRLPRO	07	A	P		RIG SERVICE  DRLG 9737 TO 10025=277@28 FPH  WOB 22/24K  TD RPM 50  MM RPM 104  PUMPING 480 GPM / 120 SPM  PSI ON/OFF 1700/2050 / DIFF350  TORQUE HIGH/LOW 8700/12200  PU 240 / SO 175 / ROT 210  MUD WT IN 10.2 / OUT 9.8 / VIS 42  NOV NOT RUNNING  SWACO ON LINE HOLD 250 PSI BACK  SLIDE 0%  ROTATE 100%  20 SOUTH 24 EAST OF CENTER		
7/10/2012	0:00	- 15:30 - 16:00	0.50	DRLPRO	02	D	P		10" FLARE DRLG 10025 TO 10543 =518@33 FPH WOB 22/24K TD RPM 50 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1950/2190 / DIFF 275 TORQUE HIGH/LOW 8700/11200 PU 240 / SO 175 / ROT 210 MUD WT IN 10.4 / OUT 10.1 / VIS 39 NOV NOT RUNNING SWACO ON LINE HOLD 300-550 PSI BACK SLIDE 0% ROTATE 100% 41 SOUTH 35 EAST OF CENTER 8-20' FLARE RIG SERVICE		
	16:00	- 19:30	3.50	DRLPRO	02	D			DRLG 10543 TO 10650=107@30 FPH WOB 22/24K TD RPM 40 MM RPM 104 PUMPING 480 GPM / 120 SPM PSI ON/OFF 1950/2190 / DIFF 275 TORQUE HIGH/LOW 8700/11200 PU 250 / SO 175 / ROT 210 MUD WT IN 11.4/ OUT 11.0 / VIS 44 12% LCM NOV NOT RUNNING SWACO ON LINE HOLD 300-550 PSI BACK PEAK OF 750 HELD 11.8 MUD WT SLIDE 0% ROTATE 100% 50 SOUTH 40 EAST OF CENTER		

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DEC 2 7 2012

Well: NBU 922-	30L4BS C	REEN						Spud Date: 5/18/2012				
Project: UTAH-I	JINTAH			Site: NBU	J 922-30L	. PAD		Rig Name No: SST 54/54, CAPSTAR 310/310				
Event: DRILLIN	G			Start Date	e: 4/30/20	)12		End Date: 7/12/2012				
Active Datum: F _evel)	RKB @4,9	89.00usft (al	oove Mean S	ea	UWI: NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/800/0/0							
Date	St	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)				
	19:30	- 23:00	3.50	DRLPRO	05	С	P	CIRC RAISE MUD WT F/11.8 12.2/44 15%LCM,50 BBL GAIN CIRC OUT GAS 40' FLARE,LOST 175 BBLS,BUILD VOLUME,, FLOW CHECK OK,,FINAL SURVEY =3.36 DEG 152 AZI,,TAKE MI SWACO OFF LINE.				
		- 0:00	1.00	DRLPRO	06	E	P	PUMP OUT 5 STANDS @255K,CHECK FLOW,PUMP DRY PILL,STRAIGHT PULL 275K,,WPER TRIP OUT				
7/11/2012	0:00 5:30	- 5:30 - 7:00	5.50	DRLPRO	06	E	P	FINISH TRIP OUT TO SHOE FOR WIPER TRIP, TIGHT SPOT 4410'-4200 REAM UP				
	7:00	- 11:00	1.50 4.00	DRLPRO DRLPRO	09 06	A E	P P	CUT & SLIP DRILLLINE 101'				
		- 11:30	0.50	DRLPRO	03	E D	P	TRIP IN BREAK CIRC @SHOE,5200',WASH BRIDGE @6658',CIRC 8252',10550'				
		- 14:00	2.50	DRLPRO	05	С	P	WASH AND REAM 90' TO BOTTOM,10' FILL				
			2.00	DALINO	00	Ü	•	CIRC BOTTOMS UP W/ 100 STKS 1650 PSI,25' FLARE F/ 20 MIN,55 BBL GAIN,RAISE MW TO 12.4+,CIRC FOR TRIP OUT				
		- 21:00	7.00	DRLPRO	06	В	Р	FLOW CHECK, PUMPPILL, TRIP OUT FOR LOGS ,TIGHT SPOT @4680',				
		- 0:00	3.00	DRLPRO	11	D	P	TRIPLE COMBO LOGS WITH HALLIBURTON LOGGERS DEPTH 10657' LOG OUT				
7/12/2012	0:00	- 3:00	3.00	DRLPRO	11	D	P	TRIPLE COMBO LOGS ,LOGGERS DEPTH 10657',RIG DOWN HALLIBURTON				
	3:00 3:30	- 3:30 - 16:00	0.50	DRLPRO	14	В	P	PULL WEARBUSHING				
			12.50	DRLPRO	12	С	Р	SAFETY MEET W/ FRANKS RIG UP RUN 4.5 11.6# P-110,134 JT LTC,113 DQX,2- MARKERS,1 X-O JT,SHOE DEPTH 10626',FLOAT COLLAR 10582',LAY DOWN & REPLACE 4 JTS BAD YIELD,				
		- 18:00	2.00	DRLPRO	05	D	P	CIRC BOTTOMS UP FOR CEMENT				
		- 20:30	2.50	DRLPRO	12	E .	P	SAFETY MEET, PRESSURE TEST TO 4500, PUMP 25 BBLS FRESH SPACER, 605SX LEAD @13# 1.77 YLDPLII+6%Gel+.4%FL-52+.4%SMS+5#/SK Kol-Seal+.25#/SK Celloflake, 1465 SX TAIL 14.3# 1.31 YLD50:50+2%Gel+10%Salt+.2%R-3 + 5#bl sf, DISPLACE 164 BBLS CLAYFIX, FINALLIFT 3200, BUMPPLUG 500 PSI OVER LOST RETURNS 134 BBLS IN DISPLACEMENT, FLOATS HELD, 2 BBLS TO INVENTORY				
		- 21:00	0.50	DRLPRO	14	В	Р	SET PACK OFF WITH CAMERON				
	21:00	- 23:30	2.50	RDMO	01	E	P	CLEAN PITS RIG RELEASE @ 23:30 7/12/2012 TO NBU 922-30L1BS				

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DIV. OF OIL, GAS & MINHING

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**US ROCKIES REGION** 

### 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	NBU 922-30L4BS GREEN	Wellbore No.	ОН	
Well Name	NBU 922-30L4BS	Wellbore Name	NBU 922-30L4BS	
Report No.	1	Report Date	5/18/2012	
Project	UTAH-UINTAH	Site	NBU 922-30L PAD	
Rig Name/No.		Event	COMPLETION	
Start Date	9/25/2012	End Date	10/19/2012	
Spud Date	5/18/2012	Active Datum	RKB @4,989.00usft (above Mean Sea Level)	
UWI	NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/80	0/0/0		

### 1.3 General

Contractor	Job Method	Supervisor	
Perforated Assembly	Conveyed Method		

### 1.4 Initial Conditions

### 1.5 Summary

Fluid Type		Fiuld Density	Gross Interval	7,369.0 (usft)-10,434.0 (us	Start Date/Time	9/24/2012 12:00AM
Surface Press		Estimate Res Press	No. of Intervals	51	End Date/Time	9/24/2012 12:00AM
TVD Fluid Top		Fluid Head	Total Shots	231	Net Perforation Interval	77.00 (usft)
Hydrostatic Press		Press Difference	Avg Shot Density	3.00 (shot/ft)	Final Surface Pressure	
Balance Cond	NEUTRAL				Final Press Date	

### 2 Intervals

### 2.1 Perforated Interval

Date Formation/ CCL@ (usft)	CCL-T MD Top S (usft)	(usft)		Misfires/ Diamete Carr Type /Stage No. Add. Shot r (in)	Carr Pha Size ('	sing Charge Desc/Charge b) Manufacturer	Charge Reason Misrun Weight (gram)
9/24/2012 WASATCH/	7,369.0	7,370.0	3.00	0.360 EXP/	3.375 12	20.00	23.00 PRODUCTIO
12:00AM	1			1 1900 1700 1111			N

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**US ROCKIES REGION** 

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@	CCL-T	MD Top	MD Base (usft)	Shot Density	Misfires/	Diamete r	Carr Type /Stage No	Carr Size	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight	Reason	Misrun
	I NOSCITOR	1	(usft)	1	(30.7)	(shot/ft)		(in)		(in).			(gram)		
9/24/2012 12:00AM	MESAVERDE/			7,385.0	7,390.0	3.00		0.360	EXP/	3,375	120.00			PRODUCTIO N	:
9/24/2012 12:00AM	MESAVERDE/			7,425.0	7,426.0	3.00		0.360	EXP/	3.375	120.00	The second secon	23.00	PRODUCTIO N	
	MESAVERDE/			7,555.0	7,559.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/		:	7,622.0	7,625.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/		1000	7,684.0	7,685.0	3.00		0.360	EXP/	3.375	120.00	and the same of th	23.00	PRODUCTIO N	
and in our com-	MESAVERDE/		:	7,698.0	7,699.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,735.0	7,738.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,802.0	7,804.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,861.0	7,862.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO	
	MESAVERDE/			7,890.0	7,891.0	3.00		0.360	EXP	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,929.0	7,931.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/	:		7,954.0	7,955.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,020.0	8,022.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/	1		8,156.0	8,157.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/			8,189.0	8,190.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/			8,262.0	8,263.0	3.00		0.360	EXP/	3.375	120.00	n i ne i negata premionario i necessario de la constanti		PRODUCTIO N	
	MESAVERDE/			8,324.0	8,326.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/			8,384.0	8,386.0	3.00		0.360	EXP/	3.375	120.00	E DE LE ANTE LE C. NOT TE ENGINEENE (AMELINE MONTE)	23.00 1	PRODUCTIO N	
	MESAVERDE/			8,528.0	8,530.0	3.00		0.360	EXP/	3.375	120.00	THE STATE OF THE S		PRODUCTIO	
	MESAVERDE/			8,594.0	8,595.0	3.00	had a creation to have a	0.360	EXP/	3,375	120.00	M. N. M.		PRODUCTIO N	:
	MESAVERDE/			8,601.0	8,602.0	3.00	10 marin 2015	0.360	EXP/	3.375	120.00			PRODUCTION	

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**US ROCKIES REGION** 

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/24/2012	MESAVERDE/	<u>. 1</u>	1 doin	8,650.0	8,653.0			0.360	EXP/	3.375	120.00			PRODUCTIO	4
12:00AM			:						The contract of the contract o	!		2002 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (		N	
9/24/2012 12:00AM	MESAVERDE/		:	8,703.0	8,704.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			8,740.0	8,742.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			8,797.0	8,798.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/	1		8,814.0	8,816.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			8,847.0	8,848.0	3.00		0.360	EXP/	3.375	120.00		1	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			8,947.0	8,948.0	3.00		0.360	EXP/	3.375	120.00	10 10 10 10 10 10 10 10 10 10 10 10 10 1		PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			8,961.0	8,962.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/			9,026.0	9,027.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			9,039.0	9,040.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/		:	9,062.0	9,063.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	:
9/24/2012 12:00AM	MESAVERDE/			9,081.0	9,083.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/		:	9,126.0	9,127.0	3.00	-	0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/		:	9,145.0	9,146.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			9,248.0	9,249.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	f
9/24/2012 12:00AM	MESAVERDE/			9,260.0	9,261.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/		:	9,270.0	9,272.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/			9,299.0	9,300.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	1
	MESAVERDE/			10,141.0	10,142.0	3.00	:	0.360	EXP/	3.375	120.00			PRODUCTIO N	:
	MESAVERDE/			10,158.0	10,159.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			10,184.0	10,185.0	3.00		0.360	EXP/	3.375	120.00	:		PRODUCTIO N	3

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/24/2012 12:00AM	MESAVERDE/			10,203.0	10,204.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,235.0	10,236.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,248.0	10,250.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,297.0	10,298.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,304.0	10,306.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,319.0	10,320.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,355.0	10,356.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/24/2012 12:00AM	MESAVERDE/			10,432.0	10,434.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

### 3 Plots

### 3.1 Wellbore Schematic



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Vell: NBU 922-3	OL4BS G	REEN						Spud Date: 5/18/201	2		
Project: UTAH-U	INTAH			Site: NBU	J 922-30L	PAD			Rig Name No: ROCKY MOUNTAIN WELL SERVICE		
vent: COMPLE	TION			Start Date	e: 9/25/20	112		E	End Date: 10/19/2012		
Active Datum: RI	KB @4,9	89.00usft (ab	ove Mean Se	a	UWI: N	N/SW/0/9	9/S/22/E/3	0/0/0/26/PM/S/2096/W	W0/800/0/0		
.evel)	No.	Today keed a keep a 1991	an financiana i sana wa								
Date	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
5/18/2012		-									
9/25/2012	9:00	- 10:30	1.50	FRAC	33	С	P		.L SURFACE CSG. MIRU B&C QUICK TEST. I TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 16 II.		
								PS PS	I TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 46 II.		
									T PSI TEST T/ 9000 PSI. HELD FÖR 30 MIN LOST D PSI.		
									COMMUNICATION OR MIGRATION WITH PRACE CSG		
									EED OFF PSI. MOVE T/ NEXT WELL. MFW		
								AT 135	TEMPT TO PUMP INTO SURFACE, PRESSURED TO		
									TMÉŠ, LOSŤ 300 TO 400 PSI, IN 5 MIN, BUT DULDN'T		
								co	NTINUALLY PUMP INTO WELL		
9/28/2012	7:00	- 7:30	0.50	FRAC	33	D	Р		B & C QUICK TEST TESTED FRAC VALVES TO 00 PSI		
	7:30	44.00							MIN GOOD BLED WELL DOWN RD TESTER		
	7.30	- 11:00	3.50	FRAC	37		P	SIZ	RF STG 1)PU 3 1/8 EXP GUN, 23 GM, 36 HOLE ZE. 90 DEG PHASING. RIH PERF AS PER PERF		
10/1/2012	6:30	- 6:45	0.25	FRAC	48		Р		SIGN. POOH. SWIFW M, REVIEW FRAV DESIGN		
	6:45	- 17:30	10.75	FRAC	36	В	Р	PE W/ ALI RE	RF & FRAC FOLLOWING WELL AS PER DESIGN 30/50 MESH SAND & SLK WTR. L CBP'S ARE HALIBURTON 8K CBP'S. FER TO STIM PJR FOR FLIUD, SAND AND HEMICL VOLUME PUM'D		
								PE PS FIN AV PR PE	CAC STG #1] WHP=1,080#, BRK DN  IRFS=4,741#, @=5.1 BPM, INJ RT=50.2, INJ  I=6,996#, INITIAL ISIP=3,639#, INITIAL FG=.79,  VAL ISIP=#, FINAL FG=., AVERAGE RATE=,  IERAGE PRESSURE=#, MAX RATE=, MAX  IESSURE=#, NET PRESSURE INCREASE=#, CALC  IRFS OPEN. X OVER TO WIRE LINE.  WIFN.		
10/2/2012	6:45	- 7:00	0.25	FRAC	48		Р		SM, PLACEMENT, GOOD COMMUNICATION		
	7:00	- 7:45	0.75	FRAC	46	E	Z		DMPUTER PROBLEMS		

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### **Operation Summary Report**

Well: NBU 922-30L4BS GREEN	Spu	ud Date: 5/18/2012
Project: UTAH-UINTAH	Site: NBU 922-30L PAD	Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3
Event: COMPLETION	Start Date: 9/25/2012	End Date: 10/19/2012

Active Datum: RKB @4,989.00usft (above Mean Sea

UWI: NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/800/0/0

Level)

	7:45 - 17:30	(hr) 9.75	FRAC	36	Code		(usft)	
Date	Time Start-End	Duration	Phase	Code	Sub	P/U	MD From	Operation

PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=10,280', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #2] WHP=1,950#, BRK DN
PERFS=4,074#, @=5.1 BPM, INJ RT=52.5, INJ
PSI=5,958#, INITIAL ISIP=2,995#, INITIAL FG=.73,
FINAL ISIP=3,713#, FINAL FG=.80, AVERAGE
RATE=52.2, AVERAGE PRESSURE=6,182#, MAX
RATE=52.8, MAX PRESSURE=7,464#, NET
PRESSURE INCREASE=718#, 21/21 100% CALC
PERFS OPEN. X OVER TO WIRE LINE

PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=9330', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #3] WHP=1,171#, BRK DN
PERFS=2,802#, @=4.9 BPM, INJ RT=52.7, INJ
PSI=5,556#, INITIAL ISIP=2,010#, INITIAL FG=.66,
FINAL ISIP=2,667#, FINAL FG=.73, AVERAGE
RATE=52.7, AVERAGE PRESSURE=5,094#, MAX
RATE=53, MAX PRESSURE=5,728#, NET PRESSURE
INCREASE=657#, 20/21 95% CALC PERFS OPEN. X
OVER TO WIRE LINE

PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=9,113', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE, AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW.

FRAC STG #4] WHP=775#, BRK DN PERFS=3,094#, @=4.9 BPM, INJ RT=52.2, INJ PSI=5,667#, INITIAL ISIP=1,947#, INITIAL FG=.65, FINAL ISIP=2,733#, FINAL FG=.74, AVERAGE RATE=52.5, AVERAGE PRESSURE=5,140#, MAX RATE=53, MAX PRESSURE=5,983#, NET PRESSURE INCREASE=786#, 18/21 86% CALC PERFS OPEN. X OVER TO WIRE LINE

PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,878', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #5] WHP=889#, BRK DN PERFS=4,249#, @=5 BPM, INJ RT=52.5, INJ PSI=4,550#, INITIAL ISIP=1,137#, INITIAL FG=.57, FINAL ISIP=2,515#, FINAL FG=.73, AVERAGE RATE=52.5, AVERAGE PRESSURE=4,668#, MAX RATE=53.2, MAX PRESSURE=5,828#, NET PRESSURE INCREASE=1,378#, 20/21 95% CALC PERFS OPEN.

**Operation Summary Report** Well: NBIJ 922-30L4BS GREEN Spud Date: 5/18/2012 Project: UTAH-UINTAH Site: NBU 922-30L PAD Rig Name No: ROCKY MOUNTAIN WELL SERVICE **Event: COMPLETION** Start Date: 9/25/2012 End Date: 10/19/2012 Active Datum: RKB @4,989.00usft (above Mean Sea UWI: NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/800/0/0 Level) Date Phase Code P/U Time Sub Duration MD From Operation Start-End Code (hr) (usft) X OVER TO WIRE LINE. SWIFN 10/3/2012 6:45 - 7:00 0.25 FRAC 48 HSM, WORKING AROUND WIRELINE 7:00 - 17:00 FRAC 36 P 10.00 В PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,683', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #6] WHP=1,443#, BRK DN PERFS=2,744#, @=4.9 BPM, INJ RT=45.6, INJ PSI=5,893#, INITIAL ISIP=1,862#, INITIAL FG=.66, FINAL ISIP=2,580#, FINAL FG=.74, AVERAGE RATE=49.7, AVERAGE PRESSURE=4.989#, MAX RATE=51, MAX PRESSURE=6,225#, NET PRESSURE INCREASE=718#, 14/21 67% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,416', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE, AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #7] WHP=1,216#, BRK DN PERFS=3,453#, @=4.8 BPM, INJ RT=49, INJ PSI=5,833#, INITIAL ISIP=1,958#, INITIAL FG=.67, FINAL ISIP=2,417#, FINAL FG=.73, AVERAGE RATE=52.5, AVERAGE PRESSURE=4.870#, MAX RATE=53, MAX PRESSURE=6,148#, NET PRESSURE INCREASE=479#, 16/21 67% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,052', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #8] WHP=985#, BRK DN PERFS=3,387#, @=5.1 BPM, INJ RT=50.6, INJ PSI=4,593#, INITIAL ISIP=1,570#, INITIAL FG=.64, FINAL ISIP=2,425#. FINAL FG=.74, AVERAGE RATE=50.7, AVERAGE PRESSURE=4,325#, MAX RATE=51.2, MAX PRESSURE=5,336#, NET PRESSURE INCREASE=855#, 21/21 95% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #9] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,834', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. **SWFN** 10/4/2012 6:30 - 6:45 FRAC 48 P 0.25 HS, RIGGING DOWN / OVERHEAD LOADS

	30L4BS GREEN	·					Spud Date: 5/18	3/2012		
Project: UTAH-l	JINTAH		Site: NB	J 922-30L	. PAD			Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3		
Event: COMPLE	ETION		Start Da	te: 9/25/20	)12			End Date: 10/19/2012		
Active Datum: R _evel)	KKB @4,989.00usft (a	bove Mean Se	ea	UWI: N	W/SW/0/9	/S/22/E/3	0/0/0/26/PM/S/20	96/W/0/800/0/0		
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
	6:45 - 17:00	10.25	FRAC	36	В	Р	(	FRAC STG #9] WHP=1,021#, BRK DN PERFS=2,869#, @=4.9 BPM, INJ RT=48.5, INJ PSI=4,847#, INITIAL ISIP=1,724#, INITIAL FG=.66, FINAL ISIP=2,276#, FINAL FG=.73, AVERAGE RATE=50.5, AVERAGE PRESSURE=4,637#, MAX RATE=51, MAX PRESSURE=5,108#, NET PRESSURE INCREASE=552#, 18/21 86% CALC PERFS OPEN. X OVER TO WIRE LINE		
								PERF STG #10] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,655", PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW		
								FRAC STG #10] WHP=1,675#, BRK DN PERFS=2,587#, @=4.9 BPM, INJ RT=50.9, INJ PSI=4,701#, INITIAL ISIP=1,384#, INITIAL FG=.62, FINAL ISIP=2,465#, FINAL FG=.76, AVERAGE RATE=50.2, AVERAGE PRESSURE=4,544#, MAX RATE=51.2, MAX PRESSURE=5,153#, NET PRESSURE INCREASE=1,081#, 18/21 86% CALC PERFS OPEN. X OVER TO WIRE LINE		
								PERF STG #11] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=5,500', [ GOT STUCK HAD TO SET PLUG TO GET FREE]		
								P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=5,500'		
								TOTAL FLUID PUMP'D=12,323 BBLS TOTAL SAND PUMP'D=302,139#		
10/12/2012	7:00 - 7:15	5.00	FRAC	31	I	P		MIRU, PU 3 7/8" BIT & POBS W/ XN SN RIH W/ 174 JTS 2 3/8" P-110 TBG OFF FLOAT TAG FILL @ 5,485', RU PWR SWVL, BRK CIRC PRESS TEST BOP TO 3,000 PSI LOST 0 PSI IN 15 MIN, SWIFWE.		
10/15/2012	7:00 - 7:15 7:15 - 15:00	0.25 7.75	FRAC FRAC	48 44	С	P P		HSM-JSA  RK CIRC, C/O 15' SAND TAG PLUG @ 5,500', DRL  HAL 8K CBP IN 5 MIN, 200 PSI INC, FCP 100 PSI, RIH  TO 7,635' (10' BELOW PERFS), CIRC CLEAN, LD 15  JTS TBG, PMP 100 BBLS 10# BRINE TO CONTROL  WELL, STD BACK 224 JTS TBG, LD BTM 2 JTS &  POBS W/ BAD PITTING FROM ACID, SWIFN.		
10/16/2012	10:00 - 15:00	5.00	FRAC	37		Р		MIRU WIRELINE.  PERF STG #11] RIH W/ HAL 8K CBP & SET @ 7,456', POOH, CHANGE OUT PIPE RAMS FOR BLIND RAMS IN BOP, MIRU B & C QUICKTEST PRESS TEST TO 7,000 PSI, PU 3-1/8 EXP GUN, 23 GRM, 0.36" HOLE, RIH PERF AS OUTLINED IN PROCEDURE, POOH, SWIFN.		
10/17/2012	7:00 - 7:15	0.25	FRAC	48		P		HSM-JSA		

					ับ	S ROC	KIES RI	EGION
					Opera	ition S	umma	ry Report
Well: NBU 922-	30L4BS C	REEN		3			Activities of the Control of the Con	Spud Date: 5/18/2012
Project: UTAH-l	JINTAH			Site: NBL	J 922-30L	. PAD		Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3
Event: COMPLE	ETION			Start Date: 9/25/2012				End Date: 10/19/2012
Active Datum: F Level)	KB @4,9	89.00usft (al	oove Mean Se	ea	UWI: N	W/SW/0/9	/S/22/E/3	0/0/0/26/PM/S/2096/W/0/800/0/0
Date	DO 1990 HAVELER I	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
	7:15	- 14:00	6.75	FRAC	36	В	Р	MIRU NABORS FRAC EQUIP.
								FRAC STG #11] BRK DN PERFS=3,621#, @=9.2 BPM, INJ RT=48.3, INJ PSI=6,030#, INITIAL ISIP=1,123#, INITIAL FG=.59, FINAL ISIP=2,236#, FINAL FG=.74, AVERAGE RATE=48.6 BPM, AVERAGE PRESSURE=4,483#, MAX RATE=60.3 BPM, MAX PRESSURE=6,326#, NET PRESSURE INCREASE=1,113#, 13/21 62% CALC PERFS OPEN. X-OVER TO WIRELINE.
	14:00	- 17:00	3.00	DRLOUT	31	1	Р	WIRELINE & FRAC EQUIP.  TOTAL FLUID PUMPED-836 BBLS  TOTAL SAND PUMPED-22,835 #  RIH W/ 224 JTS 3 3/8" P-110 TBG, SWI, D/O ON  FRIDAY
10/18/2012	7:00	- 15:00	8.00	DRLOUT	46	G	Р	/ Extension
10/19/2012	7:00	- 7:15	0.25	DRLOUT	48		Р	JSA= AWARNESS AROUND PUMP LINES
	7:15	- 7:15	0.00	DRLOUT	50			WELL TURNED TO SALES @ 1700 HR ON 10/19/2012, 3,000 MCFD, 1920 BWPD, FCP 3200#, FTP 2850#, 20/64" CK.

						KIES RE Summa	GION ry Report	
Well: NBU 922-	30L4BS GREEN						Spud Date: 5/18	8/2012
Project: UTAH-I			Site: NBI	J 922-30L	. PAD	·	-	Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3
Event: COMPLE	ETION		Start Dat	e: 9/25/20	)12			End Date: 10/19/2012
Active Datum: F Level)	RKB @4,989.00usft (at	oove Mean Se	ea	UWI: N	W/SW/0/	9/S/22/E/30	)/0/0/26/PM/S/20	96/W/0/800/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 7:15	0.00	DRLOUT	30		P	(udiy	RIH W/ TUBING TAG 1 ST CBP @ 7319' RU DRLG EQUIP EST CIRC TEST BOP TO 7000 PSI DRILL 1ST CBP
								PLUG #1] DRILL THRU HALLI 8K CBP @ 7319' IN 10 MIN W/ 20# INCREASE
								PLUG #2] CONTINUE TO RIH TAG SAND @ 7441' (15' FILL) C/O & DRILL THRU HALLI 8K CBP @ 7456' IN 10 MIN W/ 50# INCREASE
								PLUG #3] CONTINUE TO RIH TAG SAND @ 7625' (30' FILL) C/O & DRILL THRU HALLI 8K CBP @ 7655' IN 6 MIN W/ 200# INCREASE
								PLUG #4] CONTINUE TO RIH TAG SAND @ 7809' (25' FILL) C/O & DRILL THRU HALLI 8K CBP @ 7834' IN 8 MIN W/ 200# INCREASE
								PLUG #5] CONTINUE TO RIH TAG SAND @ 8027' (25' FILL) C/O & DRILL THRU HALLI 8K CBP @8052' IN 7 MIN W/ 100# INCREASE
								PLUG #6] CONTINUE TO RIH TAG SAND @ 8386' (30' FILL) C/O & DRILL THRU HALLI 8K CBP @ 8416' IN 8 MIN W/ 800# INCREASE
								PLUG #7] CONTINUE TO RIH TAG SAND @8678' (25' FILL) C/O & DRILL THRU HALLI 8K CBP @ 8703' IN 5 MIN W/ 100# INCREASE
								PLUG #8] CONTINUE TO RIH TAG SAND @ 8818' (60' FILL) C/O & DRILL THRU HALLI 8K CBP @ 8878' IN 5 MIN W/ 100# INCREASE
								PLUG #9] CONTINUE TO RIH TAG SAND @ 9083' (30' FILL) C/O & DRILL THRU HALLI 8K CBP @ 9113' IN 5 MIN W/ 0 INCREASE
								PLUG #10] CONTINUE TO RIH TAG SAND @9305' (25' FILL) C/O & DRILL THRU HALLI 8K CBP @ 9330' IN 6 MIN W/ 200# INCREASE
								PLUG #11] CONTINUE TO RIH TAG SAND @ 10250' (30' FILL) C/O & DRILL THRU HALLI 10K CBP @10280' IN 8 MIN W/ 250# INCREASE
								PBTD] CONTINUE TO RIH TAG SAND @ 10489' (93' FILL) C/O TO PBTD @ 10582' CIRC CLEAN POOH LD 13 JNTS LAND TUBING ON HNGR W/ 319 JNTS 2-3/8" P-110 EOT @ 10126.08' ND BOPS NU WELLHEAD DROP BALL PUMP OFF BIT @ 1800 PSI NU & TEST FLOW LINE TURN WELL OVER TO FBC
					REC	EIVED	)	TUBING DETAIL

DEC 2 7 2012

#### **US ROCKIES REGION Operation Summary Report** Well: NBU 922-30L4BS GREEN Spud Date: 5/18/2012 Project: UTAH-UINTAH Site: NBU 922-30L PAD Rig Name No: ROCKY MOUNTAIN WELL SERVICE Event: COMPLETION Start Date: 9/25/2012 End Date: 10/19/2012 UWI: NW/SW/0/9/S/22/E/30/0/0/26/PM/S/2096/W/0/800/0/0 Active Datum: RKB @4,989.00usft (above Mean Sea Level) Date Time Phase P/U Duration Sub Operation MD From Start-End (hr) Code (usft) K.B......18.00' HANGER.....83" 319 JNTS 2-3/8" P-110......10105.05' POBS......2.20' EOT@.....10126.08' TOTAL FLUID PUMPED=13159 BBLS RIG RECOVERED= 3000 BBLS LEFT TO REC= 10159 BBLS 7:00 10/20/2012 50 WELL IP'D ON 10/20/12 - 3217 MCFD, 840 BWPD, 0 BOPD, CP 3149#, FTP 2341#, LP 85#, 24 HRS, CK 20/64

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DIV. OF OIL, GAS & MANNG

Project: UTAH - UTM (feet), NAD27, Zone 12N Site: UNTAH\_NBU 922-30L PAD Well: NBU 922-30L4BS

Wellbore: NBU 922-30L4BS

Section: SHI -

0.00

+N/-S 0.00

Design: NBU 922-30L4BS (wp01)

Northing 14531653.59

Design: NBU \$22-30-485 (wpu1)
Latitude: 40.05528
Longitude: -109.487115
GL: 4971.00
KB: 18' RKB + 4971' GL @ 4989.00ft

### FORMATION TOP DETAILS

TVDPath 4648.00 7278.00 MDPath 4673.67 7303.71 9524.73 9594.73 9499.00 9569.00

10034.74

Formation WASATCH MESAVERDE SEGO CASTLEGATE BLACKHAWK

	WELL DETAILS: N	BU 922-30L4BS		
3	Ground Level: Easting 2064087.16	4971.00 Latittude 40.005528	Longitude -109.487115	Slot

	CASING DE	TAILS	
TVD	MD	Name	Size
2649.42	2672.52	8-5/8"	8-5/8

ТМ

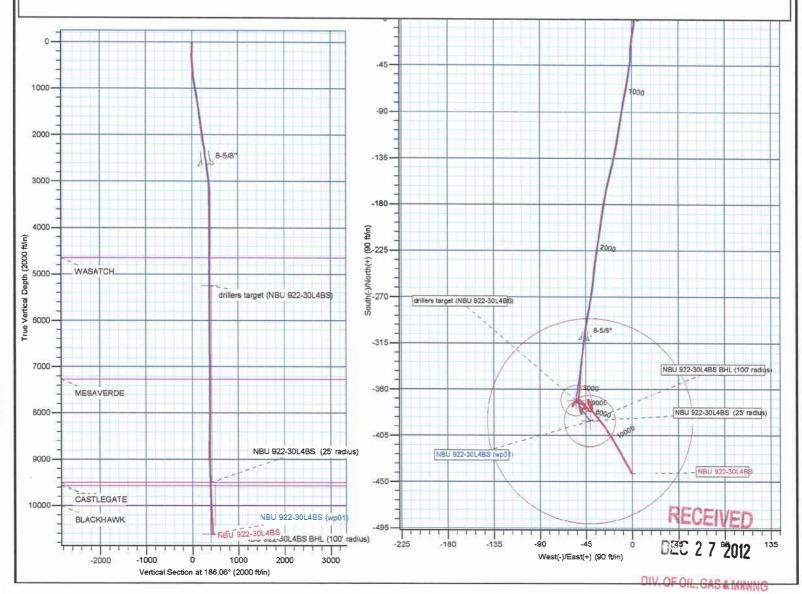
Azimuths to True North Magnetic North: 10.95°

Magnetic Field Strength: 52240.9snT Dip Angle: 65.85\* Date: 5/21/2012 Model: IGRF2010

			DEGIGIT 17	ARGEI DETAILS				
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
drillers target (NBU 922-30L4BS)	5248.00	-370.80	-54.77	14531281.92	2064038.69	40.004510	-109.487311	Circle (Radius: 15.00)
NBU 922-30L4BS (25' radius)	9499.00	-390.80	-41.45	14531262.15	2064052.34	40.004455	-109.487263	Circle (Radius: 25.00)
NBU 922-30L4BS BHL (100' radius)	10609.00	-390.80	-41.45	14531262.15	2064052.34	40.004455	-109.487263	Circle (Radius: 100.00)

DESIGN TARGET DETAILS

				SECTION DE	TAILS			
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
2643.00	8.09	187.70	2620.19	-307.71	-46.24	0.00	0.00	310.87
2793.00	8.09	187.70	2768.70	-328.63	-49.07	0.00	0.00	331.97
3178.21	0.39	187.69	3152.57	-356.82	-52.88	2.00	-180.00	360.41
5273.69	0.39	187.69	5248.00	-370.80	-54.77	0.00	0.00	374.51
5360.04	0.26	145.88	5334.35	-371.25	-54.70	0.30	-138.69	374.95
10634.74	0.26	145.88	10609.00	-390.80	-41.45	0.00	0.00	392.99



### **US ROCKIES REGION PLANNING**

UTAH - UTM (feet), NAD27, Zone 12N UINTAH\_NBU 922-30L PAD NBU 922-30L4BS

NBU 922-30L4BS

Design: NBU 922-30L4BS

## **Standard Survey Report**

25 July, 2012

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Survey Report

Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site:

UINTAH NBU 922-30L PAD

Well:

NBU 922-30L4BS

Wellbore:

NBU 922-30L4BS

Design:

NBU 922-30L4BS

Local Co-ordinate Reference:

**TVD Reference:** 

MD Reference:

North Reference:

Database:

18' RKB + 4971' GL @ 4989.00ft 18' RKB + 4971' GL @ 4989.00ft

True

Survey Calculation Method:

Minimum Curvature

Well NBU 922-30L4BS

edmp

**Project** 

UTAH - UTM (feet), NAD27, Zone 12N

Map System: Geo Datum:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 (NADCON CONUS)

Map Zone:

Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

Site

UINTAH\_NBU 922-30L PAD

Site Position: From:

Lat/Long

Northing:

14,531,670.05 usft 2,064,112,37 usft

Latitude:

40.005572

Position Uncertainty:

Easting:

13-3/16 '

Longitude:

-109,487024

**Position Uncertainty** 

0.00 ft

Slot Radius:

Grid Convergence:

0.97°

Well Well Position NBU 922-30L4BS

+N/-S +F/-W 0.00 ft 0.00 ft 0.00 ft Northing: Easting:

Wellhead Elevation:

5/21/2012

9.00

14,531,653.60 usft 2,064,087.15 usft

10.95

ft

Latitude:

Ground Level:

Longitude:

40.005528 -109.487115 4.971.00 ft

Wellbore

NBU 922-30L4BS

**Magnetics** 

Model Name

**IGRF2010** 

Sample Date

Declination (°)

Dip Angle (°)

Field Strength

(nT)

NBU 922-30L4BS

Audit Notes:

Version:

Design

1.0

Phase:

**ACTUAL** 

0.00

Tie On Depth:

0.00

9.00

52,241

Vertical Section:

Depth From (TVD)

(ft)

+N/-S (ft)

+E/-W

Direction

(°)

65,85

188.55

Survey Program

7/25/2012 Date

2,643.00 Survey #1 (NBU 922-30L4BS)

10,650.00 Survey #2 (NBU 922-30L4BS)

From (ft)

239.00

2,761.00

To (ft) Survey (Wellbore)

**Tool Name** 

MWD

MWD

Description

MWD - STANDARD MWD - STANDARD

Survey

Measured Depth (ft)	Inclination	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	
239.00	0.70	36,53	238.99	1.13	0.84	-1.24	0.30	0.30	0.00	
329.00	0.88	157.91	328.99	0.93	1.42	-1.13	1.53	0.20	134.87	
421.00	2.21	171.09	420.95	-1.48	1.96	1.17	1.49	1.45	14.33	
516.00	3.34	192.89	515.84	-5.98	1.63	5.68	1.61	1.19	22.95	
611.00	5.01	189.20	610.59	-12.78	0.35	12.58	1.78	1.76	-3.88	
706.00	6.51	185.42	705,11	-22.23	-0.82	22.11	1.63	1.58	-3.98	
802.00	8.35	182.25	800.30	-34.62	-1.61	34.47	1.96	1.92	-3.30	
896.00	9.41	189.11	893,17	-49.03	-3.09	48.94	1.59	1.13	7.30	
989,00	10.55	189,37	984.76	-64.93	-5.68	65.06	1.23	1.23	0.28	

7/25/2012 12:42:35PM

Page 2

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COMPASS 5000.1 Build 56

DEC 2 7 2012

Survey Report

Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site:

UINTAH\_NBU 922-30L PAD

Well: Wellbore: NBU 922-30L4BS NBU 922-30L4BS

Design:

NBU 922-30L4BS

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Well NBU 922-30L4BS

18' RKB + 4971' GL @ 4989.00ft 18' RKB + 4971' GL @ 4989.00ft

True

Minimum Curvature

Design: NBI	U 922-30L4BS			Database:		е	dmp		
Survey									
Measured			Vertical			Vertical	Dantan	Build	
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Dogleg Rate	Rate	Turn Rate
(f)	(°)	(°)	(ft)	<b>(ft)</b>	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100 usft)
1,083.00	10.11	189.81	1,077.24	-81.55	-8.49	81.91	0.48	-0.47	0.47
1,177.00	9.15	189.87	1,169.91	-97.05	-11.18	97.63	1.02	-1.02	0.06
1,272.00	9.67	187.35	1,263.64	-112.40	-13.49	113.16	0.70	0.55	-2.65
1,366.00	9.50	192.54	1,356.32	-127.80	-16.19	128.79	0.94	-0.18	5.52
1,460.00	8.09	193.94	1,449.22	-141.80	-19.47	143.12	1.52	-1.50	1.49
1,556.00	8.71	192.54	1,544.19	-155.45	-22.67	157.09	0.68	0.65	-1,46
1,649.00	8.27	192.36	1,636.17	-168.86	-25.63	170,79	0.47	-0.47	-0.19
1,745.00	7.74	188.58	1,731.23	-181.99	-28.07	184.14	0.78	-0.55	-3.94
1,839.00	8.01	186,99	1,824.35	-194.75	-29.82	197.02	0.37	0.29	-1.69
1,932.00	8.27	189.29	1,916.41	-207.78	-31.68	210.19	0.45	0.28	2.47
2,026.00	8.35	189.37	2,009.42	-221,19	-33.89	223.77	0.09	0.09	0.09
2,119.00	8.19	186,44	2,101.46	-234.44	-35,73	237,14	0.48	-0.17	-3.15
2,210.00	8.18	187.18	2,191.53	-247.30	-37.27	250.09	0.12	-0.01	0.81
2,302.00	8.09	184.89	2,282,60	-260.24	-38.64	263.10	0.12	-0.10	-2.49
2,396.00	8.09	191.63	2,375.67	-273.31	-40.53	276.30	1.01	0.00	-2.4 <del>9</del> 7.17
2,488.00	8,09	189.99	2,466.75	-286.03	-42.96	289.24	0.25	0.00	-1.78
2,581.00	8.18	188.14	2,558.82	-299.02	-45.03	302,39	0.30	0.10	-1.99
2,643.00	8.09	187.70	2,620.19	-307.71	-46.24	311.17	0.38	-0.15	-1.99 -0.71
TIE ON			2,020.10	307.11		011.17	0.10	-0.13	-0.71
2,761.00	8.20	186.58	2,737.00	-324.30	-48.32	327.88	0.16	0.09	-0.95
FIRST MWD	SURVEY								
2,857.00	7.96	186.34	2,832.05	-337.71	-49.84	341.36	0.25	-0.25	-0.25
2,952.00	6.43	183.18	2,926.30	-349.56	-50.86	353.23	1.66	-1.61	-3.33
3,048.00	5.06	184.23	3,021.82	-359.15	-51.47	362.81	1.43	-1.43	1.09
3,143.00	4.50	185.11	3,116.49	-367.04	-52.11	370.71	0.59	-0.59	0.93
3,239.00	3.88	172.11	3,212.23	-374.01	-52.00	377.58	1.18	-0.65	-13.54
3,334.00	2.69	170.61	3,307.07	-379.39	-51.19	382.78	1.26	-1.25	-1.58
3,430.00	1.44	156.23	3,403.01	-382.72	-50.34	385.95	1.40	-1.30	-14.98
3,525.00	0.31	60.48	3,498.00	-383.68	-49.64	386.80	1.58	-1,19	-100.79
3,621.00	1.38	7.86	3,593.99	-382.41	-49.25	385.48	1.27	1.11	-54.81
3,715.00	1.06	10.36	3,687.97	-380.43	-48.94	383.48	0.35	-0.34	2.66
3,810.00	0.88	22.98	3,782.95	-378.90	-48.50	381.90	0.29	-0.19	13.28
3,906.00	0.44	79.36	3,878.95	-378.15	-47.85	381.06	0.76	-0.46	58.73
4,001.00	1.06	141.85	3,973.94	-378.77	-46.95	381.54	0.99	0.65	65.78
4,097.00	0.25	324.36	4,069.94	-379.30	-46.52	382.00	1.36	-0.84	-184.89
4,191.00	0.81	31.73	4,163.93	-378.57	-46.29	381.24	0.80	0.60	71.67
4,287.00	0.44	44.98	4,259,93	-377.73	-45.67	380,32	0.41	-0.39	13.80
4,382.00	0.25	104.23	4,354.92	-377.52	-45.21	380.05	0.40	-0.20	62.37
4,477.00	0.50	345.98	4,449.92	-377.17	<b>-4</b> 5.11	379.69	0.69		-124.47
4,572.00	1.19	328.98	4,544.91	-375.92	-45.72	378,55	0.76	0.73	-17.89
4,667.00	0.38	321.73	4,639.90	-374.83	-46.43	377.57	0.86	-0.85	-7.63
4,762.00	0.13	305.36	4,734.90	-374.52	-46.71	377.31	0.27	-0.26	-17.23
4,856.00	1.13	315.36	4,828.90	-373.80	-47.45	376.70	1.07	1.06	10.64

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COMPASS 5000.1 Build 56

Survey Report

Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site:

UINTAH\_NBU 922-30L PAD

Well: Wellbore: NBU 922-30L4BS NBU 922-30L4BS

Design:

7/25/2012 12:42:35PM

NBU 922-30L4BS

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method: Database:

Well NBU 922-30L4BS

18' RKB + 4971' GL @ 4989.00ft

18' RKB + 4971' GL @ 4989.00ft True

Minimum Curvature

edmp

					Database.						
Survey	Measured			Vertical			Vertical	D-ul	·		
	Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Dogleg Rate	Build Rate	Turn Rate	
	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	
	4,952.00	1.19	318.11	4,924.88	-372.39	-48.78	375.50	0.09	0.06	2.86	
	5,047.00	0.81	305,36	5,019.86	-371.26	-49.98	374.57	0.46	-0.40	-13.42	
	5,141.00	0.69	304.48	5,113.85	-370.56	-50.99	374.02	0.13	-0.13	-0.94	
	5,237.00	0.38	293.86	5,209.85	-370.10	-51.76	373.68	0.34	-0.32	-11.06	
	5,332.00	0.31	273.23	5,304.85	-369.96	-52.30	373.62	0.15	-0.07	-21.72	
	5,428.00	0.31	230.48	5,400.85	-370.11	-52.76	373.84	0.24	0.00	-44.53	
	5,523.00	0.75	228.36	5,495.84	-370,69	-53.43	374.51	0.46	0.46	-2.23	
	5,619.00	0.88	226.73	5,591.83	-371.61	-54.43	375.57	0.14	0.14	-1.70	
	5,714.00	1.00	226.11	5,686.82	-372.68	-55.56	376.80	0.13	0.13	-0.65	
	5,810.00	1.06	214,48	5,782.80	-374.00	-56.67	378.27	0.23	0.06	-12,11	
	5,905.00	1.19	213.48	5,877.78	-375.54	-57.71	379.95	0.14	0.14	-1.05	
	6,000.00	0.50	181,86	5,972.77	-376.78	-58.27	381,26	0.85	-0.73	-33.28	
	6,095.00	0.31	339.73	6,067.77	-376.95	-58.37	381.44	0.84	-0.73	166.18	
	6,190.00	1.19	8.36	6,162.76	-375.74	-58.32	380.23	0.98	0.20	30.14	
	6,286,00	1.13	16.36	6,258.75	-373.84	-57.90	378.30	0.18	0.06	0.20	
	6,381.00	1.06	81,11	6,353.73	-373.84	-57.90 -56.77	376.30	1.24	-0.06	8.33	
	6,477.00	1.19	92.73	6,449,71	-372.72	-54.90			-0.07	68.16	
	6,572.00	1.13	101.48	6,544.69			376.74	0.27	0.14	12.10	
	6,667.00	1.19	112.48		-372.95	-53.00	376.69	0.20	-0.06	9.21	
	6,667.00	1,19	112.40	6,639,67	-373.52	-51.17	376.97	0.24	0.06	11,58	
	6,762.00	1.25	117.61	6,734.65	-374.37	-49.34	377.55	0.13	0.06	5.40	
	6,857.00	1.38	123.11	6,829.63	-375.48	-47.46	378.36	0.19	0.14	5.79	
	6,953.00	1.63	123.98	6,925.59	-376.87	-45.36	379.43	0.26	0.26	0.91	
	7,048.00	1.19	141.98	7,020.57	-378.41	-43.63	380.69	0.65	-0.46	18.95	
	7,143.00	0.25	161.60	7,115.56	-379.38	-42.96	381.55	1.01	-0.99	20.65	
	7,238.00	0.38	174.61	7,210.56	-379.89	-42.86	382.04	0.16	0.14	13.69	
	7,333.00	0.50	176.98	7,305.55	-380.62	-42.81	382.75	0.13	0.13	2.49	
	7,428.00	0.25	275.61	7,400.55	-381.01	-43.00	383.17	0.62	-0.26	103.82	
	7,524.00	0.06	348.73	7,496.55	-380,94	-43.21	383.13	0.25	-0.20	76.17	
	7,619.00	0.19	96.98	7,591.55	-380.91	-43.07	383.08	0.23	0.14	113.95	
	7,715.00	0.56	99.36	7,687.55	-381.01	-42.45	383.08	0.39	0.39	2.48	
	7,810.00	0.88	101.86	7,782.54	-381.23	-41.28	383,13	0.34	0.34	2.63	
	7,905.00	0.88	104.98	7,877.53	-381.57	-39.86	383.26	0.05	0.00	3.28	
	8,001.00	0.50	37.11	7,973.52	-381.43	-38.89	382.97	0.87	-0.40	-70.70	
	8,096.00	1.19	350.48	8,068.51	-380.12	-38.80	381.67	0.97	0.73	-49.08	
	8,191,00	1.94	350.23	8,163.48	-377.57	-39.24	379.21	0.79	0.70	0.00	
	8,286.00	2.31	333,23						0.79	-0.26	
			326.86	8,258.41 8,354.37	-374.27 371.94	-40.38	376.12 373.01	0.77	0.39	-17.89	
	8,382.00 8,477.00	1.00 0.68	328.37	8,354.37	-371.84	-41.71 42.45	373.91	1.38	-1.36	-6.64	
	8,477.00 8,573.00			8,449.36	-370.67	-42.45 42.00	372.86	0.34	-0.34	1.59	
	0,073.00	0.25	316.61	8,545.36	-370.03	-42.90	372.30	0.46	-0.45	-12.25	
	8,668.00	0.00	351.36	8,640.36	-369.88	-43.04	372.17	0.26	-0.26	0.00	
	8,764.00	0.00	128.86	8,736.36	-369.88	-43.04	372.17	0.00	0.00	0.00	
	8,858.00	0.36	181.00	8,830.36	-370.18	-43.04	372.46	0.38	0.38	0.00	
	8,954.00	0.81	187.73	8,926.35	-371.15	-43.14	373.44	0.47	0.47	7.01	
	9,049.00	1.06	176.86	9,021.34	-372.69	-43.18	374.97	0.32	0.26	-11.44	

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COMPASS 5000.1 Build 56

Survey Report

Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site:

UINTAH\_NBU 922-30L PAD

Well: Wellbore: NBU 922-30L4BS

D

NBU 922-30L4BS

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Database:

18' RKB + 4971' GL @ 4989.00ft 18' RKB + 4971' GL @ 4989.00ft

True

Survey Calculation Method:

Minimum Curvature

Well NBU 922-30L4BS

edmp

Design:	NBU 922-30L4BS	

Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	``			( 7	(/	. ,	,	,	(
9,145.00	1.19	152.98	9,117.32	-374.47	-42.68	376.65	0.50	0.14	-24.88
9,240.00	1.31	156.73	9,212.30	-376.34	-41.80	378.38	0.15	0.13	3.95
9,336.00	1.63	148.73	9,308.27	-378.52	-40.66	380.36	0.40	0.33	-8.33
9,431.00	2.25	147.35	9,403.21	-381.24	-38.95	382.80	0.65	0.65	-1.45
9,526.00	2.88	138.61	9,498.12	-384.61	-36.37	385.74	0.78	0.66	-9.20
9,622.00	3.19	140.73	9,593.98	-388.48	-33.09	389.09	0.34	0.32	2.21
9,717.00	3.25	143.73	9,688.83	-392.70	-29.82	392.77	0.19	0.06	3.16
9,813.00	3.38	144.86	9,784.67	-397.21	-26.58	396.75	0.15	0.14	1.18
9,908.00	3.31	145.36	9,879.51	<del>-4</del> 01.75	-23.41	400.77	0.08	-0.07	0.53
10,006.00	3.44	149.48	9,977.34	-406.62	-20.31	405.12	0.28	0.13	4.20
10,102.00	3.50	149.73	10,073.16	-411.63	-17.37	409.64	0.06	0.06	0.26
10,197.00	3.44	150.35	10,167.99	-416.61	-14.50	414.14	0.07	-0.06	0.65
10,292.00	3.50	150.10	10,262.82	-421.60	-11.64	418.65	0.07	0.06	-0.26
10,388.00	3,75	152.73	10,358.62	-426.93	-8.74	423.49	0.31	0.26	2.74
10,483.00	3.69	150.48	10,453.42	-432.35	-5.81	428.41	0.17	-0.06	-2.37
10,579.00	3.63	152.73	10,549.23	-437.74	-2.90	433.31	0.16	-0.06	2.34
LAST MWD	SURVEY								

Design Anne	otations					
	Measured	Vertical	Local Coordinates			
	Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
	2,643.00	2,620.19	-307.71	-46.24	TIE ON	
	2,761.00	2,737.00	-324.30	-48,32	FIRST MWD SURVEY	
	10,579.00	10,549.23	-437.74	-2.90	LAST MWD SURVEY	
	10,650.00	10,620.08	-441.85	-0.78	PROJECTION TO TD	

Checked By:	Approved By:	Date:

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